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Original Articles

CHRONIC PERITONITIS WITH COMPLETE OBSTRUCTION,

CAUSED BY NUMEROUS CONSTRICTIONS, OF A PREVIOUSLY UNDESCRIBED CHARACTER, THROUGHOUT THE INTESTINE.*

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Patient.—Dr. L. A. H., aged 35, married, was admitted to Hope Hospital May 24, 1907.

History.—Grandmother died of cancer. One aunt died of consumption, and an uncle had "white swelling." Aside from children's diseases, the patient had had an attack of pneumonia in 1886, followed by empyema for which a rib was resected and drainage instituted. Complete recovery followed but the diseased chest still remained considerably contracted. Drank excessively whole of 1903, but is a total abstainer now. In December, 1906 (six months before admission), after a full meal of sausage, he was taken with severe abdominal cramps and vomiting, for relief from which he took ⅜ gr. of morphin hypodermatically. The pain was worse in the lower abdomen, and especially on the right side, and some tenderness, localized over the painful area, followed. This attack caused him to quit work for one day. Six weeks later he had a similar attack, accompanied by vomiting of a light, bright green fluid and a more severe one occurred March 28, 1907. The bowels were constipated. A few days before coming to the hospital he had a formed, putty-colored stool. No elevation of temperature was present during those attacks. Patient stated that abdomen was sore when he was jolted and complained of accumulation of gas in the stomach, which was relieved by belching or the use of the stomach pump. Frequently vomited bright greeen fluid, and complained of a metallic taste in the mouth. Very difficult to get the bowels to move; the stools were not formed.

Examination.—Fairly nourished, good color, dark complexion. Abdomen rather retracted and boggy. An indistinct mass was felt in right pelvic region, both on rectal and abdominal palpation. Examination of the chest was negative. Pulse 62; temperature 97.6 F. Up to two days prior to operation the case was in charge of Dr. G. W. McCaskey, to whom I am indebted for the following clinical facts: The blood picture was normal. Urine normal in character but reduced in amount, only 18 ounces being passed in the twenty-four hours. Bacteriologic examination of vomitus was made by Dr. Rhamy. He reported that he found a bacillus which culturally and microscopically gave characteristics of the *Bacillus typhosus*. Widal reaction positive. Opsonic index to autogenous bacilli, .47. No reaction to two injections of old tuberculin of 5 and 10 mg., respectively. Permeability of the intestinal tube was demonstrated by the charcoal test. No diagnosis could be made other than that of a low grade, wide-spread peritonitis with incomplete obstruction of the bowels. An exploratory operation was thought advisable and accordingly done May 25, 1907, two days after his entrance into the hospital.

Operation.—Ether anesthesia. Midline incision. Practically universal close adhesions were found between contiguous bowel surfaces. A little fluid was found. Very little adhesion between visceral and parietal peritoneum was found. The appendix was freed and removed but presented nothing abnormal. The bowel adhesions were fairly completely broken up. The small intestine seemed abnormally short and nowhere constricted, but on the contrary seemed unusually large in its transverse diameter, and on palpation felt as though it were filled with fish worms. Attempts to empty sections of the bowel by stripping were ineffectual. The surface of the bowel was grayish-white, and the non-adherent surfaces perfectly smooth. An incision was made into the ileum. No escape of feces or gas. Bowel seemed full of mucous membrane arranged in accordion-like folds. A probe could not be made to pass in either direction. The finger could be made to pass in either direction by carefully working the folds aside. It was concluded that the case was hopeless, even temporary relief being out of the question. Accordingly, the intestine was closed by a line of through-and-through catgut sutures and over this a line of continuous linen sutures, and the wound in the abdomen closed by buried catgut and adhesive plaster. The patient left his room for the operating room at 9 a. m. and returned at 11:45 a. m. Just before the operation his pulse was 70, and temperature 97.6 F. Twelve hours after the operation his pulse was 102 and his temperature 98.2 F. Sixteen hours after the operation a catheter was inserted and the bladder found empty. From the time of the operation until his death, which occurred on the morning of May 29 (three days after the operation), but eight ounces of urine were secreted. It will be remembered that the urine was reduced in quantity when he came into the hospital, owing, no doubt, to the frequent vomiting. There was no vomiting for twenty-four hours after the operation, when it commenced again and continued until his death, which occurred 72 hours after the operation. At first the vomitus was green as before, but later became dark and brown. The temperature gradually rose until it reached 102 F. before death, while the pulse became gradually more frequent and more feeble and death occurred from a gradual failure of the vital powers 72 hours after the operation.

Autopsy.—No record was made of the exact time intervening between the death and autopsy, but it was about two hours. Both the wound in the abdomen and that in the intestine were found to be healing normally. No evidence of recent peritoneal infection. The stomach presented nothing abnormal except some adhesions to the abdominal wall. The whole of the small intestine and all of the large except the rectum was covered by a layer of grayish-white, rather strong, plastic material, about 1/16 of an inch in thickness, which could be stripped off, leaving the underlying peritoneum looking, to the naked eye, normal. This membrane was smooth on the free surfaces of the bowel but ragged where it had been adherent. This adventitious coat did not reduce the transverse diameter of the bowel, but shortened it by actual measurement between 70 and 80 per cent. Closely placed parallel incisions around the bowel would allow it to be drawn out to its normal length, as would stripping off the false membrane (Fig. 1). Mesentery and omentum were normal. The liver, spleen, and peritoneal surface of the bladder were covered, as were the bowels, by this membrane, but not diminished in size. Transverse sec-

* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

tion of the bowel shows its lumen to be occluded by transverse folds of mucous membrane (Fig. 2).

Specimens were given to Dr. B. W. Rhamy, the pathologist of Hope Hospital, and also to Dr. W. H. Welch of Johns Hopkins. The two reports agree except that Dr. Rhamy found bacilli corresponding to the *B. typhosus*, as did those he found in the vomitus during the life of the patient, while Dr. Welch found no bacilli save those which "were probably the result of postmortem contamination." It was endeavored to eliminate postmortem contamination from the specimen examined by Dr. Rhamy, while no such care was taken of the specimen sent to Dr. Welch. This perhaps explains the difference in the opinions expressed as to the cause of the peritonitis. Dr. Rhamy's diagnosis was chronic plastic peritonitis due to typhoid infection. Dr. Welch's report is as follows:

PATHOLOGIC REPORT BY DR. W. H. WELCH.

Gross Appearances.—The specimen, which had been preserved in formalin and alcohol, was a portion of the small intestine, evidently jejunum, which had been severed from the mesenteric attachment except at one end, where a small piece of the mesentery was retained. The specimen measured 21 cm. (8 in.) in length opposite to the mesenteric border, and 15 cm. (6 in.) in length along the mesenteric border. For a distance of 13 cm. (5 in.) from one end the intestine had been cut open along the mesenteric margin, the remaining 8 cm.

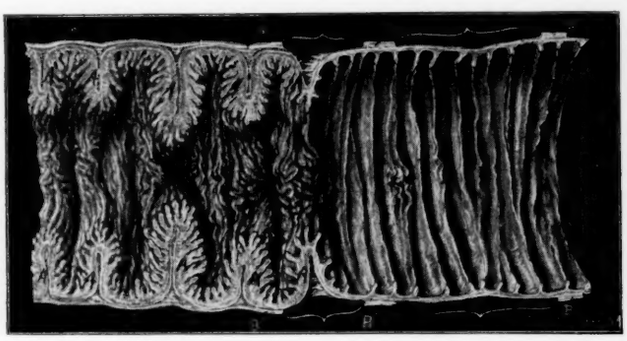

Fig. 1.—Showing inner aspect of bowel as seen on section. To the left at A A A are seen infoldings; to the right the false membrane B B B has been cut, allowing the bowel to be drawn out to normal length. Brackets show bowel pulled out after division of false membrane; length before division ½ inch, after division 2¾ inches. Infolding only partly obliterated under short bracket.

(3 in.) being unopened. The unopened part of the intestine measured 10 cm. (4 in.) in external circumference, was not collapsed and felt from the outside as if filled with a rather elastic and moderately firm material. The transverse section presented by the cut end of this solid, unopened part of the intestine showed no recognizable lumen, but in its place a complicated mass of folded mucous membrane. Only with difficulty and after much twisting and turning could a metallic probe be passed from the lumen corresponding to the opened part of the intestine through the lumen of the unopened part; after inserting the probe this latter part was cut open opposite to the mesenteric attachment, when it is seen that the obstruction was due entirely to infoldings of the intestinal wall occurring at short intervals and kept in place by an organized false membrane attached to the peritoneal surface. This false membrane covered the entire peritoneal surface of the intestine, but over the opened part of the specimen, as stated in Dr. Porter's letter accompanying the specimen, "closely placed parallel incisions around the bowel, made through the false membrane," had permitted this part of intestine to be stretched to its normal length and had effaced the involutions of the intestinal wall, so that here the lumen was free from obstruction and the mucous surface showed no especial abnormality. It was evident that by a similar procedure the same result could be obtained in the remaining part of the specimen. There were no contents found in the lumen of the obstructed intestine after opening it as described.

As has already been stated above the entire outer surface of the intestine was covered with a false membrane. This membrane which was from 0.5 to 1 mm. (1/50 to 1/25 in.) in thickness, was grayish in color, of firm consistence, almost cartilaginous in translucence over most of its extent, and smooth over the greater part of its free surface, although careful inspection showed that much of this surface was finely granular or slightly shaggy as would result from a thin coating of fibrinous exudate on an organized fibrous membrane. No remnants of fibrous threads or bands projected from the free surface of the false membrane. This dense and nearly uniform false membrane, consisting apparently of organized fibrous tissue with superficial fibrinous exudate, was attached to the underlying wall of the intestine by fibrillated connective tissue, which was evidently also of new formation. This attachment was in general so loose that there was no difficulty in peeling the dense false membrane off from the intestine, the surface thus exposed appearing smooth in consequence of the delicacy of the severed threads of tissue. The attachment of the false membrane was firmer and more intimate over the intestine situated between the infoldings of the wall, while it was very loosely attached directly over these infoldings. No

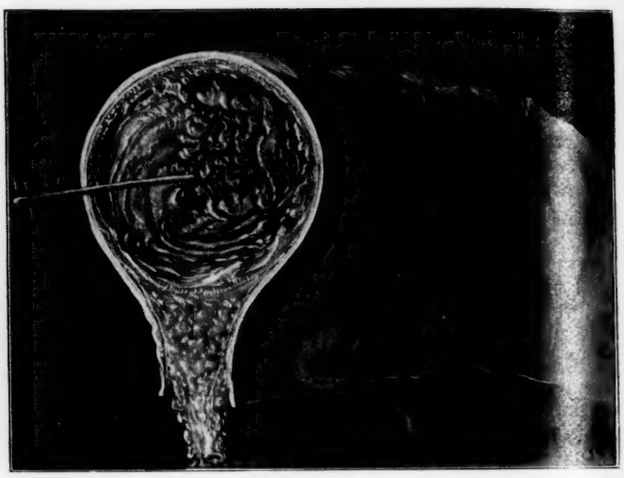

Fig. 2.—Showing occlusion of lumen by infolding of the bowel coats.

tubercles could be seen with the naked eye in the outer covering of the intestine or elsewhere.

In this examination the greatest interest attached to the infoldings of the intestinal wall which have filled up and obstructed the lumen of the bowel. As these infoldings had been entirely obliterated in the opened part of the intestine by numerous transverse incisions through the false membrane they could be studied only in the eight centimeters of the intestine which had not been cut open previous to the reception of the specimen. The folds were the result of a sharp bending inward of all the coats of the intestinal wall from a direction parallel to the long axis of the intestine to one perpendicular to this axis, much as if a contraction of a narrow band of the circular muscular coat had occurred and persisted or been held in place. These segmental, transverse constrictions of the intestinal wall followed each other longitudinally at short intervals, as many as eight being present in a length of 8 cm. (3 in.) of intestine. Each of the infoldings extended as a rule transversely nearly around the circumference of the intestine, but some were shorter. There was a certain alternating arrangement of the folds such that the shallower part of one fold fitted in between the deeper parts of adjacent folds, whereby a spiral-like arrangement of the intestinal ridges on the mucous surface resulted. This arrangement suggested that each infolding corresponded to the course of the larger vessels which run transversely around the bowel, and in many of the folds it was possible to see these vessels in the lax tissue bridging the depressions. The depth of the folds averaged from

1 to 2 cm. (⅜ to ¾ in.), the tendency was for each fold to become shallower in its course and to disappear before it had completely encircled the bowel. The thickness of the folds was about 1 cm. (⅜ in.), the adjacent muscular coats on each side of a fold being nearly in apposition in the deeper part of the depression and separating slightly above, so as to approximate a V-shape. Between successive folds the lumen appeared of normal dimensions, but this lumen was evident only on stretching the intestine longitudinally as the folds were so close together and so deep as to obstruct it completely. The dense false membrane which covered the outer surface of the intestine did not follow the involution of the intestinal coats into the folds, but it extended bridge-like over the depressions, and it was evident that it was these bridges of false membrane which kept the folds in place. By incising these bridges transversely over the folds the latter were readily obliterated on stretching the bowel longitudinally. There was little evidence of the existence of the constrictions on inspection of the outer wall of the unopened intestine, which appeared merely invested in a uniform grayish coat of false membrane; still, careful inspection showed frequent slight external furrows corresponding to the constrictions. The delicate loose connective tissue already noted as present beneath the denser part of the false membrane was, however, present in the depressions, stretching between the adjacent sides of an infolding. It was evident that the existence of the constrictions or folds described must have caused an extraordinary shortening of the intestine. By actual measurement of the part of intestine in which the constrictions were in place (not having been obliterated by transverse cuts through the false membrane) there was found to be a shortening of from 70 to 80 per cent. of the normal length. The inner or mucous surface of the intestine showed no abnormalities other than the ridges resulting from the constrictions. Valvulæ conniventes were high and numerous as in the jejunum. There was no ulceration, necrosis or hemorrhage to be detected with the naked eye. The small tag of mesentery which still remained attached to one end of the intestine was moderately rich in adipose tissue and contained two or three small lymphatic glands, free from any abnormality.

Microscopic Examination.—The mucous membrane was well preserved and appeared entirely normal. The submucosa also was free from any pathologic change. The circular muscular coat appeared somewhat thicker in the part of the intestinal wall included in the constrictions than in that between these, but this was probably due to the obliquity of the section of the muscle in the former situation. The spaces between the muscular bundles of the circular coat appeared rather wider than normal. The longitudinal muscular coat also appeared somewhat thicker near and in the depressions, but the same explanation probably applies here also. This coat was in places moderately invaded by new connective tissue extending in from the peritoneal surface. The existence of the constrictions was sharply defined on the microscopic sections by the abrupt change of direction of the mucous, submucous and muscular coats, the angle of the bend being almost a right angle, but with its apex rounded off. The distance between the muscular coats on each side was about 2 or 3 mm. at the angle and became less as they approached the point of union of the muscle at the bottom of the constriction. The peritoneum was entirely replaced by organizing exudate and connective tissue. The original subperitoneal tissue could be made out as a layer firmly connected with the longitudinal muscle. Over this was, first, a layer of richly vascularized fibrillated connective tissue, containing many fibroblasts, plasma cells and lymphocytes. This layer was very lax, with wide meshes and numerous blood vessels over and between the layers of the infoldings of the subjacent coats, whereas it was denser and more intimately connected with the adjacent tissues between the successive constrictions. This layer passed gradually into a dense layer of organizing connective tissue of a rather sclerotic or, in places, hyaline appearance, containing fibers and long fibroblasts, disposed mostly parallel to the longitudinal axis of the intestine, leucocytes and developing capillaries. In this layer, old fibrin in process of substitution by connective tissue was enclosed. On the free surface was a fibrinous exudate, in places old, dense and hyaline in character, and in other places fresh, with fibrillated fibrin and many polymorphonuclear leucocytes, with fragmenting nuclei. The layer described under the gross appearances as "false membrane" consisted mainly of the organizing connective tissue and exudate. Corresponding to the constrictions in the intestinal wall the denser part of the organizing exudate stretched across the interval between the walls of a fold, and did not follow the intestinal wall as it bent abruptly inward. The subjacent delicately fibrillated, very vascular, lax, newly formed connective tissue extended down in long threads which appeared to be stretched and which ran perpendicularly from the under surface of the dense membrane into the depressions, which were thus occupied by this lax tissue with wide meshes. Corresponding to the tops of many of the constrictions the denser texture of the bridges of false membrane extended down for perhaps 3 or 4 mm. (⅛ in.) as a wedge shaped mass from the under surface of a bridge into the depression, the apex of the wedge lying in the center of a depression. No tubercles were seen in any of the sections. Sections stained for bacteria (for tubercle bacilli, Gram's stain, and methylene blue) showed various bacilli and cocci on the surface of the exudate, but these resembled bacteria found on the surface of the mucous membrane, and were probably the result of postmortem contamination.

Pathologic Diagnosis.—Chronic organizing peritonitis of unrecognized etiology. Intestinal obstruction resulting from numerous transverse infoldings or constrictions of the intestinal wall, these being held in place by bridges of dense, organizing false membrane.

COMMENTS BY DR. WELCH.

After completing the foregoing examination and description I received from Dr. Porter two other parts of the intestine from the same case. These were both of small intestine. One measured 48 cm. in length, and the folds had been largely obliterated by transverse cuts through the false membrane. The other piece was still unopened. The appearances and pathologic changes in these parts were identical with those already described, the same obstruction from infoldings of the intestinal wall existing as in the specimen already described.

The mode of production of intestinal obstruction in this case is most remarkable and quite unfamiliar to me, and, so far as I am aware, previously unrecorded, although I have not searched the literature. The peritonitis was of the organizing, proliferative type associated with fibrinous exudation. It was probably the primary lesion. Anatomic features of interest relating to the peritonitis were the uniformity of the false membrane enveloping the bowel, the absence of fibrous adhesions to any notable extent, the laxity of the layer of connective tissue connecting the dense false membrane with the intestinal wall where the constrictions occurred, and the bridging of the tops of the constrictions by the dense false membrane of such a nature that when these bridges were cut through around the bowel the constrictions could be completely obliterated and the intestine restored to its normal length and appearance, save for the evidences of peritonitis. Most remarkable were the extent of intestine implicated in this unusual form of intestinal obstruction, all of that submitted for examination being similarly affected, the great shortening of the intestine in length resulting from the myriads of transverse constrictions, and the symmetry and regularity of the segmental constrictions entirely unlike the nicks and puckerings of the intestinal wall resulting from peritoneal adhesions.

It is evident from the description that the dense false membrane was responsible for keeping the constrictions in place. A further question is whether it was also responsible for their original production. If it be assumed that in process of organization of a progressive fibrinous exudate a false membrane, composed partly of connective tissue, was formed, that this surrounded the bowel uniformly, and was firmly adherent around the bowel at intervals, then it would seem that contraction of this false membrane in a longitudinal direction in consequence of the growth of cicatricial tissue would draw the intestinal wall into transverse folds at the situations where the contracting membrane is loosely attached. Mr. Brödel, who has kindly contributed the drawings (Figs. 1 and 2) accompany-

ing this report, and who is not only an admirable artist but also a skilled anatomist, has called my attention to the possibility of explaining such a disposition of the false membrane and the situation and regularity of the constrictions by taking into account the arrangement of the intestinal vesssels. On an injected and moderately distended small intestine, slight transverse furrows can be seen, each corresponding to the course of an artery which passes from the mesenteric border over the side of the intestine, these arteries alternating as they pass now to one, now to the other, side of the intestine.

As already noted the constrictions seemed to correspond to the situation of these arteries. The suggestion is advanced, therefore, that the situations where the false membrane was loosely attached and where, therefore, the constrictions occurred, correspond to these arterial furrows, and that the constrictions themselves were due to contraction in a longitudinal direction of the organizing false membrane which was firmly adherent to the intestinal wall between the furrows. The distinguishing feature of the process in accordance with this view and as seems supported by the histologic characters described, is the peculiar mode of organization of a peritoneal exudate whereby the resulting membrane is firmly adherent in places to the intestinal wall and only loosely adherent in intervening places. As already noted the fibers and fibroblasts in the organizing membrane had a prevailing direction parallel to the long axis of the intestine, and this arrangement may account for preponderance of contraction in this direction.

The mechanical explanation which is offered is advanced as an hypothesis without strong proof. Other hypotheses have suggested themselves which take into account the participation of muscular contraction during life in producing the constrictions. In the stage of chronic peritonitis represented in this case, at which the acute exudate is far removed by intervening newly formed connective tissue from the muscular coats there is no reason to assume paralysis of these coats during life.

While it is apparent that the anatomic condition in this case was in no sense intussusception, the possibility may be entertained that muscular contractions causing the bowel contractions may have been such as would initiate intussusception, but that the dense false membrane covering the intestine was an obstacle to the production of actual intussusception.

Nothing was found to indicate the cause of the peritonitis by examination of the specimen sent me.

Dr. Welch's report was written Aug. 14, 1907. Up to the present time, April 8, 1908, he has been unable to find among several of his pathologist friends of wide experience any one who had ever seen or heard of a similar case. My search of the literature has been extensive but not exhaustive and I have found no similar case. Further investigation of the literature is now being made for me and the result will be reported later.

The strange thing to me in this case is not that the bowel should be infolded, shortened and hence obstructed, as it is, by a false membrane of such character and distribution as we have here, but that we have a membrane of this character so generally and evenly disposed. Given a membrane of the quality of the one found, disposed as it was, and it seems to me that the infolding, shortening and obstruction such as found in the case reported is the natural and almost necessary result. The natural tendency to contract, which is inherent in tissue such as that composing this membrane, would, under the circumstances, be enhanced by the contraction of the longitudinal fibers of the intestine. The tendency to circular constriction would be combated by the bowel contents and the infolding of the bowel coats.

In other words, in a case such as this the contracting force of the false membrane and the longitudinal fibers of the bowel worked together without resistance, whereas the tendency to circular contraction or constriction was opposed by the bowel contents and the infolding. The outer surface of this false membrane is older and, therefore, firmer than the inner surface. This permitted the circular fibers to pull away from the false membrane, thus forming the folds, which finally filled the bowel and prevented circular constriction by the false membrane. In other words, the conditions found seem to me to illustrate the result of comparatively equal forces acting in opposite directions, the one meeting with resistance and the other with none.

DISCUSSION.

DR. G. W. MCCASKEY, Fort Wayne, Ind.: It was my privilege to observe this patient for two or three weeks prior to turning him over to Dr. Porter. The case presented features of extraordinary interest. The complaint at the outset, when the patient first consulted me, was general abdominal pain and persistent green vomitus. I thought at first that I had to deal with a pyocyaneus infection. I made a culture and found an organism which corresponded morphologically to the *Bacillus pyocyaneus*. I turned it over to a bacteriologist, who said that it was the Eberth bacillus. Since then I have corresponded with the patient's family, but could get no history of anything even simulating typhoid fever.

I think that tuberculosis can be fairly excluded from the case. I had two injections of tuberculin given, first 5 mg. and then (time not permitting larger injections) 10 mg., but could not get any reaction whatever. I am sorry that I did not have the tuberculo-opsonic index taken. I did, however, have a pure culture made of the bacillus found, and the opsonic index for this organism was about 0.43. I then had an autovaccine made from this, gave several injections, bringing the opsonic index up to about 1, but, of course, the case went on just the same. We may have an organism which overcomes the blood resistance and to which the opsonic index will be low, yet that organism may possibly not have anything to do with the pathologic conditions with which we have to deal, although I think it quite possible in this case that this organism was the cause of the lesion. Whatever the infection was, it was progressive at the time of the operation. Dr. Welch says that the plastic exudate did not cover the mesenteric peritoneum but was limited to that portion covering the intestine. This circumstance, I think, points to the conclusion that the exudate was due to an intraintestinal process, and in all probability was bacterial in character.

From the exclusion of tuberculosis and the finding of a bacillus resembling the Eberth bacillus I think that we may possibly have had to deal with an atypical chronic typhoid infection. It might be alleged in this case that we had a latent tuberculosis to deal with, and consequently no reaction was obtained to the tuberculin injections. The process was not latent, however. Dr. Welch says that there was continual new formation of plastic exudate, so that it is fair to say that the infectious agent was active at the time, and, inasmuch as the patient did not respond to 10 mg. of tuberculin, I think we can with considerable probability exclude tuberculosis as an etiologic factor in this case. At first it looked like a case of intestinal obstruction, but I used the charcoal test, and the charcoal passed through, which I think extraordinary, since Dr. Welch could scarcely introduce a probe. The case, so far as I know, is absolutely unique. A study of the gastric contents threw no light on the case. There were about 30 or 40 degrees of free hydrochloric acid. The leucocyte count was within the normal range. Although we concluded that there was plastic peritonitis, neither of us had any idea of the real pathologic findings at the autopsy.

Lip Reading for the Partially Deaf.—A society has been founded in France to teach the principles and technic of lip reading. In a communication in the *Revue de Laryngologie*, July 18, the society appeals to physicians to urge the partly deaf to learn this simple art. It relieves their ears of the strain of their efforts to hear, which fatigues or exhausts the auditory nerve and aggravates the condition of the ears, constantly working against the tendency to heal.

ROENTGENOLOGY IN NEUROLOGY.*

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My object in presenting this paper is to emphasize the diagnostic value of the Roentgen rays in certain neurologic affections in which the etiologic factors constituting the nervous symptoms may be traced back to some obscure pathologic condition. Or, again, when the value of the rays has been abundantly proved as a corroborative measure in the etiology of the symptomatology of some special neurologic condition.

I do not claim that the Roentgen rays will supplant the skilled neurologist in offering a diagnosis; I repeat that this special agent acts most happily for its confirmatory value. In treating of this subject I will follow the Roentgenographic findings rather than the method usually pursued in accordance with the neurologic manifestations.

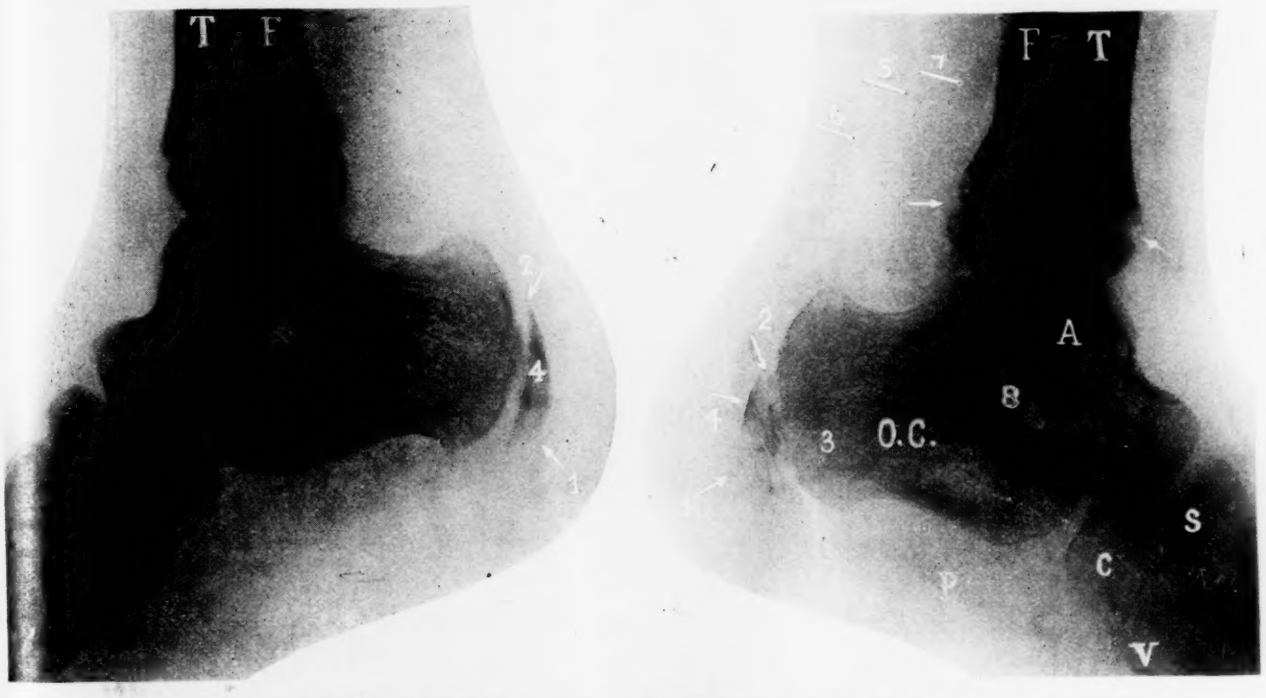

Fig. 1.—Roentgenogram of epiphysitis of the right os calcis; 1 shows the absorbed portion of the os calcis while 4 shows the healthy remnant of that bone. F, fibula; T, tibia; A, astragalus; S, scaphoid; O. C., os calcis; C, cuboid. The illustration on the left shows the normal os calcis in the patient referred to me by Dr. H. Augustus Wilson.

THE OSSEOUS SYSTEM.

Epiphysitis may simulate a neuritis, as the following case well illustrates: A girl, 4 years of age, complained of constant pain in the heel. The diagnosis seemed to establish the presence of irritation produced by an ill-fitting shoe. A subsequent Roentgenogram, however, showed an inflammatory condition and a partial absorption of the epiphysis of the os calcis (Fig. 1).

Osteitis and Periostitis.—Periostitis, especially in the course of a nerve or its vicinity or along the path of a neural groove, may produce pressure symptoms on the nerve, or, extending, give rise to a neuralgia or neuritis. In one case periostitis of the lower third of the radius was accountable for the excruciating suffering experienced by one of my patients. Examinations with the Roentgen rays revealed a periosteal inflammation corresponding to the area of exquisite tenderness.

Fractures and Dislocations. — Old and unreduced fractures and dislocations are often responsible for the presence of certain neurologic conditions. It should not be forgotten that fractures at the middle of the humerus may be the cause of wrist-drop.

Synostoses.—Excessive callus formation may manifest itself either by pressure on, or by inclusion of the nerve.

Supernumerary Ribs and Vertebræ.—Before the advent of the *x*-rays the diagnosis of the above conditions was beset with many difficulties and was rarely discoverable during life. It seems advisable to recall something of the symptomatology: Pain, shooting or neuralgic in character, usually first occurring in the neck and darting along the arm, not infrequently running as far as the elbow; again the pain may be felt as low down as the hand, or it may radiate to the head and chest. Muscular exertion (hard work) is prone to augment the suffering, and, indeed, many believe it to be the cause of it. These supernumerary ribs and vertebræ may closely simulate aneurism, causing aphonia, dysphagia, wasting of the muscles, etc.; but a single *x*-ray examination of the neck or spine will clearly establish a diagnosis (Fig. 2).

Osseous Tumors.—Whether these be malignant or benign, their pressure on adjacent nerves will occasion among the various other symptoms pronounced pain, etc.

Exostoses. — Exostoses, both congenital and gonorrheal, are often recognizable by means of the *x*-rays. In exostoses involving the lumbar vertebræ, pressure symptoms, whether produced in the cord itself or by the vertebræ, would be difficult or impossible of detection, except through the diagnostic agency of the *x*-rays.

Hypertrophy and Atrophy.—Unilateral enlargement of the articular surfaces of bones are frequently noticed

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty ninth Annual Session, held at Chicago, June, 1908.

in such diseases as tabes dorsalis, syringomyelia, etc., dependent on certain trophic nerve changes. Atrophy of the osseous structures is best illustrated in the bones of the upper and lower extremities, where the atrophic condition may be the result of disease, of brachial palsies, etc. In bony atrophies, contractures of the muscles occur, the bones subsequently becoming rarefied and smaller, the process of growth being delayed either unilaterally or bilaterally.

Acromegaly.—This disease is best studied by observing the osseous changes occurring in the skull, chest, hip, knee, etc. (Fig. 3). Acromegaly needs to be differentiated from osteitis deformans, congenital bony enlargements, and the so-called giant growth, common only to single members, etc. In acromegaly the long bones, i. e., the femurs, are laterally hypertrophied, the articular ends of the tibia and fibula are rarefied, while the cancellous portion of the long bones is hypertrophied. On making an *x*-ray examination the bony structures of the

Fig. 2.—Roentgenogram of a supernumerary right cervical rib. That the delicate shadows in the original Roentgenogram may not be lost in reproduction, the supernumerary rib has been lightly outlined. Patient of Dr. Solis Cohen, a girl, aged 17, showed a slight prominence over the right supraclavicular space. She complained of a radiating pain extending along the left side of the neck. The Roentgenogram shows the additional rib springing between the interval of the sixth and seventh cervical ribs. This supernumerary rib is about 3 inches long, one portion of 2 inches being separated from the remaining portion by a slight interval.

hands and feet at once arrest attention. The epiphyses of the phalanges are enlarged and deformed, the spots noted on the bony surfaces being osteophytes. The anterior extremities of the metatarsal bones are less opaque than in the normal state. In a sagittal view the characteristic shape of the skull, of the frontal ethmoidal and sphenoidal sinuses point unmistakably to the diagnosis; the sella turcica is widened and the occipital protuberance is enlarged and rarefied.

Cretinism.—It has long been known that an intimate relationship exists between pathologic changes in the thyroid gland and cretinism. In the latter disease there occurs a premature union of the sutures and the epiphyses, causing the small length and peculiar contour of the skull. It has been shown that there is a variable time for the growth of bone and the union of cartilage. The arrest of bony growth is variable; this may lead to alteration taking place in special cartilages, which is frequently designated as chondro-dystrophy of thyropriva.

In cretinism in young subjects the *x*-rays will readily reveal a short diaphysis and the absence of osseous articulating surfaces; instead we see the space between the diaphysis and the epiphysis to be clear and transparent to the rays, proving that the growth of the epiphysis has been arrested and has remained cartilaginous.

Not only are the centers of ossification delayed, but also the ossification of the epiphyses and the juxta-

Fig. 3.—Roentgenogram of a knee-joint of a patient with acromegaly. The case was referred to the author by Dr. Dercum and the Roentgenograms of the skull, chest and hip show, as well as does the knee-joint, the characteristic bony changes. The above illustration shows osteoporosis and alterations in the articular ends of the bones, hypertrophy of the cancellous portion of the femur, etc.

epiphyseal cartilages may persist for a long time, thirty or forty years, or even longer, and often never unite. By the administration of thyroid extract the growth of bone and the process of ossification have been hastened, proving the true pathogenesis of cretinism, as I have observed skiagraphically.

ARTICULAR SYSTEM.

The value of the *x*-rays is well attested in differentiating various arthritic conditions. Thus we can readily determine whether the changes present are: (1) Intra-articular, peri-articular, intra- or extra-capsular, tuberculous, simple or infectious, hypertrophic or atrophic, etc. (2) The existence of arthropathies

(nervous in origin) such as tabes, syringomyelia, rheumatoid arthritis, arthralgias of hysteria (Brodie's joints) traumatic neuroses, neurasthenia and psychasthenia. (The painful joints of psychoneurotics.) The knee joint is most frequently affected (gonalgia), the shoulder joint quite frequently so, while the talocrural and the intertarsal joints are only occasionally thus affected. Not infrequently the cervical portion of the spinal column may be the symptomatic region when the condition may be confused with that of cervical caries.

The diagnosis of arthropathies by the Roentgen rays obviates the former error of believing these changes, in so many instances, to be illustrations of neurotic joints; nevertheless, there is still danger of looking on the psychoneurotic joint as an organic disorder, and even today it is the skilled neurologist whose interference is so often necessary to prevent the surgeon employing the

Fig. 4.—**Roentgenogram of an advanced type of tabetic arthropathy of the left knee joint. P, the patella is adherent to F, the femur. The letters F and T accompanied by arrows, indicate bony excrescences of the femur and tibia.**

knife, saw or cast on these troublesome cases in the neurologist's category. Let me casually remark that the most brilliant studies and results bearing on the relation between diseases of the joints and of the nervous system had its inception and elaborate development in America.

Tabetic Arthropathies.—Ever since Charcot's brilliant researches on joint lesions occurring in tabes (1868) the study has received a new impetus. And while the clinical picture of the tabetic arthropathies is a familiar one, nevertheless the many obstacles arising not infrequently make a differential diagnosis a matter of difficult accomplishment. In the early stages the Roentgenogram will show a hazy joint due to fluid in the capsule of the joint, or to the initial stages of a gonorrheal gonitis or a tuberculous arthritis, unless these facts are cleared up by the history and clinical symptoms.

In mild cases there may be distention of the capsule of the joint (especially well shown in the knee joint), with very little change in the peri-articular ligaments. In the advanced cases there may be discernible certain nodules of bone or cartilage (semi-opaque masses). In the severer types of arthropathies these fibrous structures become thinned and fused with neighboring structures, forming general fibrous masses in which bony and cartilaginous nodules frequently appear (Fig. 4).

Tabes Dorsalis.—In tabes dorsalis there occurs an osteoporosis and finally disappearance of the articular extremities; at this time there is evidenced the presence of exuberant osseous vegetations forming osteophytes and likewise calcareous deposits on the articulating surfaces, on the capsule of the joint, and even in the neighboring muscles and ligaments. The destructive process consists of cartilage disappearance, while the osseous structure rarefies. This invisible rarefaction is due to the superimposition of the calcareous deposit in the periarticular space.

SYRINGOMYELIA.

The joint affections in syringomyelia resemble very closely those that occur in tabes, but I have noticed that the upper extremity is more frequently affected: the shoulder, the elbow and especially the wrist; on the contrary, in tabes the lower extremity is mostly affected.

In syringomyelia the pathologic process in the development of arthropathies is slightly different. In advanced cases we notice hypertrophic enlargement of the extremities of the bones entering into the formation of the joint, which is usually a striking feature. The capsule is thickened, often ossified in places, and erosion of the cartilage or changes in the synovial membrane takes place. In other instances, instead of hypertrophy, atrophy is the result, and the bone is absorbed, spontaneous dislocation is noticed and exostoses are developed around the joint.

In tabes we but slightly observe exuberant ossification, the lesions will end in a complete destruction of the articulation, and in the disappearance of the osseous extremities. In shoulder affection the humeral head is deformed and dislocated and gradually absorbed. Metacarpal bones and the phalanges show clear disseminated spots.

Arthritis Deformans.—From tabetic arthropathies we differentiate arthritis deformans as follows: Arthritis deformans affects the small joints (rarely the knee), it exhibits hypertrophic varieties, the dislocation occurring is lateral, the osteophytes are sharp, pointed or curved, the extremities are absorbed and pointed, consequently displacement and overriding are very prone to occur.

IN MISCELLANEOUS CONDITIONS.

Brain Tumors, Clots and Cysts.—Roentgen ray diagnoses of nervous affections in the softer tissues are not so satisfactory and are very difficult of accomplishment for the following reasons:

1. Soft tissue tumors do not cast very dense shadows (cysts containing fluid often throw denser shadows).

2. Tumors, cysts, etc., are situated within thick bony structures as the skull and vertebral column.

3. The new growth may be far from the plate.

Tumors of the spinal cord are difficult to reproduce on the photographic plate because of the irregularity and thickness of the vertebræ and of the irregularity of the processes of the body of the vertebræ. Of course, tumors of bony growth are often noticeable on the plate. The portion of the cord between the plates of cartilage being transparent, the shadow of the cord may be visible on the plate; this is especially true in the lumbar region.

Pachymeningitis. — Pachymeningitis may show a slightly increased shadow less dense than the bones of the skull.

Aneurism.—I have frequently diagnosed, skiagraphically, paralysis of the recurrent laryngeal nerve which was causing aphagia or aphonia, in no way indicating the presence of an aortic aneurism.

Mediastinal Tumors.—Mediastinal tumors may often produce similar troubles in the larynx, the laryngoscope failing to reveal the cause of the condition. In these cases the Roentgen rays will readily establish the diagnosis.

Foreign Bodies.—The presence of foreign bodies may produce various neurologic disturbances. Their detection and localization will assist the surgeon in their removal, thus revealing to the neurologist the true cause of the disturbance. The presence of a foreign body may cause most serious trouble as the result of pressure symptoms.

In Dentistry.—Many dental affections are responsible for manifold neurologic symptoms, which are now readily diagnosticated by means of the *x*-rays. Unerupted teeth, malpositions, the presence of a fragment of broken instrument, etc. Not infrequently these conditions produce headache, neuralgias, epileptic seizures, etc.

THERAPEUTIC VALUE.

Microscopic examination of irradiated tissues has amply proved that the Roentgen rays exert a marked and peculiar action on those areas with which they are brought in contact. In neuralgias, whether of the acute or chronic type, marked alleviation of the suffering and of the lengthening of the intervals between the seizures has been noted. In some cases permanent cures have been attained. The analgesic action of the *x*-rays is now an indisputable fact.

On neoplasms the action of the *x*-rays has been proved by the clinical and microscopic changes occurring in the growth. Pressure exerted by the growths may assert itself as pain, neuralgia or some other neural manifestation. The irradiation of these neoplasms will not infrequently result in the absorption or lessening of the size of the growth, with relief of the pressure symptoms and a material improvement in the patient's condition. Roentgenology in neurology is still in its infancy. The future alone can reveal the possibilities of the Roentgen rays in the domain of neurologic diagnosis and therapeutics. With advances in the apparatus and increased skill on the part of the operator, many obscure and possibly unknown conditions may yet unfold themselves as pathologic states, heretofore unrecognizable.

SUMMARY.

1. The Roentgen rays have been invaluable in detecting the etiology of nervous manifestations, the result of disease of the osseous system. The rays are not a substitute for, but only an adjunct to, the neurologist's investigations.

2. Changes occurring in the osseous system (resulting in neurologic symptoms) are readily detected by the rays.

3. The differential diagnosis between epiphysitis and neuritis is readily accomplished.

4. Osteitis and periostitis are readily differentiated and diagnosed by this agent.

5. Neurologic conditions dependent on old and unreduced fractures and dislocations, and pressure symptoms from excessive callus formation, are now readily diagnosticated.

6. Supernumerary ribs and vertebræ formerly so rarely diagnosed during life are easy of detection by the *x*-rays, as is their differentiation from aneurism.

7. Osseous tumors and exostoses are easily discernible. Troublesome pressure symptoms are thus readily accounted for.

8. Osseous atrophy and hypertrophy are recognizable by the *x*-rays, and their study is important because of the diseases with which these conditions are associated.

9. The osseous changes occurring in acromegaly and cretinism are well brought out skiagraphically and are easy of differentiation.

10. The value of the Roentgen rays is of paramount importance in determining changes occurring in the articular system, whether due to pathologic states in, near or around a joint, as in the study of arthropathies, spinal-joint affections, etc.

11. The arthropathies of the tabes and dementia paralytica form an interesting study from a Roentgen-ray viewpoint. The early, mild, advanced and severe types of arthropathies present varying Roentgenograms.

12. The differential diagnosis between tabes dorsalis and arthritis deformans presents a widely contrasting picture by the use of the rays.

13. Brain tumors, clots and cysts are more difficult of interpretation. Soft tissues do not cast shadows so dense as do the harder tissues, the growth is within a bony cage and may be far from the plate.

14. Similarity of symptoms arising from aneurisms and mediastinal tumors are frequently differentiated by a skiagram.

15. The skiagraphic detection, localization and extraction of foreign bodies will frequently explain existing neurologic manifestations.

16. Dental studies have greatly progressed since the introduction of the *x*-rays. The headaches, neuralgias, etc., so often dependent on unerupted teeth, malpositions, etc., are now readily detected and remedied.

17. The therapeutic action of the Roentgen rays is evidenced in their analgesic action, in their palliative and often curative effects in neuralgia, and in their causing an absorption or decrease in size of various growths and neoplasms. Painful pressure symptoms are thus mitigated.

18. Future research, increased skill in manipulation, and greater improvements in the apparatus employed, may open up new paths in neurologic studies and investigations.

DISCUSSION.

DR. GEORGE A. MOLTEN, Denver: I believe that the greatest value of the Roentgen ray in nerve work lies in the revealing of the impingement on nerves by exostoses and other deformities. The *x*-ray is very valuable in the depiction of brain tumors which are localized clinically, but I find that I can not rely absolutely on the shadow in deep-seated tumors. If a tumor happens to be deep-seated the shadow will be flared out and not sharp in outline. If the tumor is near the

surface, however, the outlines are sharp and the *x*-ray evidence is more reliable. This applies more often to tumors of the cerebellum. Of course, if the tumor happens to be soft in character the shadow will not be so dense. I met a curious case of a cyst which I had localized in the superior parietal convolution of the right side. I had some doubt about the location, and had a skiagram taken; but strangely enough the shadow covered almost the entire side of the skull. I determined, however, after careful clinical study of the case, that I must be correct in my original diagnosis, and therefore the skull was opened, disclosing first, a small cyst, then a dilated lateral ventricle five and one-quarter inches long and four and one-half inches in width, filled with a straw-colored fluid resembling cerebrospinal fluid. Why the skiagram reproduced the shadow I don't know, but sometimes, I presume, fluids, by reason of refraction, will give shadows which may be misleading. I think that the value of the *x*-ray for the diagnosis of nervous diseases in exostoses and other deformities causing nerve impingement, and also especially in localizing brain tumors which are not too deep-seated, can not be overestimated.

DR. S. J. WRIGHT, Akron: The medical profession is not always ready to receive new discoveries. Roentgen was very adroit in keeping his discovery absolutely secret for several months until he was prepared to exhibit to the medical profession skiagraphs. Dr. Robert Morris of New York City, at the Ohio State Medical meeting at Columbus, presented his views on obliterative appendicitis, described by Nicholas Senn of revered memory, and defended surgeons who had been criticized for operating in this condition. Dr. Morris discovered the fact that while obliterative appendicitis destroys the mucous membrane of the appendix the muscular layer and peritoneal coat and leave scar tissue, it does not destroy the nerves, but is likely to pinch them. This condition is an indication for operation or treatment to relieve the nerves, which can readily be done. Dr. Morris says that ablation of the scar tissue removes all symptoms. I had such a case, one of a man about 40, who had repeated attacks of catarrhal appendicitis. He had almost constant pain in the appendiceal region and distention with gas, and a classical history of catarrhal appendicitis at intervals of weeks or months for several years. I told the patient that he probably had no ordinary appendicitis and no appendix, but that there might be scar tissue pinching the nerves. I used an *x*-ray, released the nerves, and a complete recovery followed; and I hold that every surgeon who has been criticized for removing the fibrous condition resulting from the obliteration of an appendix can defend himself in the absence of pus or infection on these grounds.

EXPERIMENTS ON AN ASH-FREE DIET AND SALT METABOLISM

WITH ESPECIAL REFERENCE TO EDEMA IN DIABETES MELLITUS.*

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The rôle played by the inorganic salts in diabetes mellitus has not attracted much attention. It was therefore a matter of considerable interest when Taylor[1] noted the presence of acetone and diacetic acid in the urine and acetone in the breath while he was living on an ash-free diet. The question was thus raised whether the withdrawal of salts from the diet might lead as a rule to the production of an acidosis in a healthy individual or accentuate an acidosis already existing in a diabetic patient. We have investigated the former of these points during the last year and have accumulated some information bearing on the latter point.

Two healthy students were placed on Taylor's ash-free diet, consisting of the whites of eighteen eggs, 200 gm. sugar and 120 gm. olive oil. After twelve and nine days respectively the chlorin excretion in the urine fell to 0.17 gm. Tests for acetone and diacetic acid in the urine were invariably negative. The results of these experiments showed no marked changes in metabolism, but rather represented the withdrawal of accessory salts from the body. They confirmed the views of earlier writers that it is practically impossible to diminish the chlorin of the body by more than 10 to 14 per cent., and demonstrated that the loss of water was proportionate to this. No remarkable symptoms appeared and those that occurred were less than would be expected from such a diet, even though it contained a normal quantity of salts. They gave no support to the view that the withdrawal of salts from the diet gives rise to an acidosis of the acetone type. A full account of these experiments will be found elsewhere.[2]

Evidence against the accentuation of an acidosis by the withdrawal of salt (not salts) was afforded by observations on a case of diabetes. This patient showed on the first few days of observation a positive carbohydrate balance of 60 gm. During a febrile attack this positive carbohydrate balance changed to a minus carbohydrate balance of the severest degree, not only all the carbohyrate in the diet appearing in the urine but nearly all the carbohydrate as well which theoretically could be formed from the protein metabolized in the body. On account of the severity of the case and the febrile condition of the patient the diet was of very simple character, and accidentally contained a very small quantity of salt. The chlorin was estimated repeatedly during the course of the case and on the fifteenth day was found to amount to but 1.7 gm. in twenty-four hours. Two days later it fell to 0.63 gm. and on the following day was 0.64 gm. Neither the symptoms nor the degree of acidosis, as determined by the ammonia, gave evidence of increased acid poisoning despite this low chlorin. We would not attach too much importance to these results, because the excretion of chlorin may be so variable a factor when there exists, as in this case, trouble with the kidneys. Details of this case are given in the article above mentioned.[2] In Case 135, later described in this present paper, diabetic coma appeared when the salt was lowered in the diet, but the connection between the two phenomena would appear to be indirect, though by no means unimportant. Before entering further on the discussion of salt in diabetes, however, we wish to refer to the occurrence of edema in this disease.

The occurrence of edema in diabetes mellitus finds scant mention in the literature. Naunyn[3] says that edema is not a seldom occurence in cachectic patients with severe diabetes, and is often an early symptom with patients having arteriosclerosis and myocardial degeneration, with or without the presence of albumin. It is occasionally present without cause. He mentions one case in which the edema disappeared as the patient became sugar-free on a diet containing 60 to 100 gm. bread. It is his impression (p. 261) that arteriosclerotic patients with diabetes mellitus seldom suc-

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* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

1. Taylor: Studies on an Ash-Free Diet, Univ. Calif. Pub., Pathology, 1904, i, No. 7, p. 71.

2. Arch. Int. Med., July, 1908, i, 615.

3. Naunyn, B.: Diabetes Mellitus, ed. 2, 1906.

cumb to progressive dropsy, and very seldom present the picture of venous cardiac failure with its signs of passive congestion—persistent dyspnea, marked cyanosis, anasarca and fluid in the cavities of the body.

Von Noorden[4] writes: "In a few cases the patients have developed edema during the oat treatment, whereas otherwise, as we all know, the diabetics rarely exhibit edema." In another place[5] he makes this same statement apply to diabetics, even in the presence of valvular disease. Williamson[6] has observed anasarca in more than 5 per cent. of his diabetic patients. He records one case in particular in which it was not associated with albumin or cardiac or vascular trouble and cites Frerichs as having noted the same phenomenon in twenty-five out of four hundred cases. Roberts (cited by Williamson, p. 22) attributed the slight pitting over the tibiæ to the atonic state of the subcutaneous tissue rather than to true edema; but Ebstein[7] ascribes it in a case of his own to the influence of the vascular nervous system.

Seven of our own diabetic patients have shown edema of greater or less extent, although at the time they presented very slight or no evidence whatsoever of disease of the kidneys or heart. In only two instances did the arteries present even moderate sclerosis. The cases were all of the severe type of diabetes. This was shown by the marked acidosis, minus carbohydrate balance, and the loss of forty to forty-six pounds during the previous course of the disease. Four of these patients have since died in typical diabetic coma; one of the remaining showed 7 gm. ammonia in the urine for twenty-four hours, and another 3.7 gm. ammonia. The edema in these patients occurred during a period in which there was a considerable restriction of the diet with a consequent fall in the excretion of sugar. Under such circumstances a simultaneous rise in the degree of acidosis was to be expected and such in fact took place. Along with the restriction of the diet sodium bicarbonate was administered either for the first time or in doses larger than those previously given. None of the patients died for some months after the edema was observed, although two showed distinct, clinical, premonitory signs of coma at this time. A brief summary of the various cases follows:

CASE 40.—The patient was a woman, aged 57, whose weight had fallen from a maximum of 152 pounds to 92 pounds. She then gained 21 pounds in twenty days in the spring of 1904 and presented edema. During this period the carbohydrates were restricted so that the excretion of sugar fell from a total of 141 gm. to 104 gm. There was a minus carbohydrate balance and diacetic acid was present in excessive amount. Sodium bicarbonate 12 or more gm. daily. There was a slight trace of albumin in the urine and occasionally casts. Premonitory signs of coma were present throughout, but death in coma did not take place until two months later.

CASE 79.—The patient was a man, aged 43, whose weight had fallen from 180 pounds to 139 pounds. He gained 5½ pounds in ten days in September, 1904, and edema appeared. Five days before the first weight was taken there were 253 gm. sugar in the urine, but on the last days the sugar had fallen to 36 gm. There was a minus carbohydrate balance which persisted except for a few days later when the patient became sugar-free temporarily on a protein fat diet and the employment of vegetable days. Diacetic acid was absent at first, but soon appeared with the restriction of carbohydrates. Sodium bicarbonate was probably given in doses of 4 to 8 gm. The urine showed no casts and only the merest trace of albumin. One year and a half later, during a period of strict dieting and increase of alkali, the patient told me that his weight rose in the course of a few days 25 to 30 pounds and that there was general dropsy. The diacetic acid was then present in the urine in excessive quantities. Death occurred about six months later in coma.

CASE 101.—The patient was a man, aged 57 years, whose weight had fallen from 175 pounds to 132 pounds. He gained 13 pounds in twenty-two days in the autumn of 1905. Edema was marked at the time of maximum weight, but was not present before. In this interval the sugar in the urine decreased from 154 to 26 gm., and during the middle portion of the period there was a great increase in diacetic acid, and a minus carbohydrate balance. Sodium bicarbonate was given 8 to 12 gm. daily. The urine was usually free from casts and contained only a slight trace of albumin. Death occurred in coma a year and a half later.

CASE 132.—The patient was a man, aged 42, whose weight had fallen from 182 pounds to 128 pounds. He gained 4¾ pounds in ten days, November, 1907, only to lose the same in the following twenty-four hours. Edema was slight. During this period the sugar in the urine fell from 220 gm. to 60 gm. and the carbohydrates in the diet were lowered in about the same proportion. On admission the diacetic acid was recorded with a single + sign, but after ten days with ++++ signs. There was a minus carbohydrate balance. No sodium bicarbonate was given the first five days, but the latter five days it averaged 18 gm. There was a very slight trace of albumin and no casts.

CASE 164.—The patient was a man, aged 43, whose weight had fallen from 198 pounds to 132 pounds. He gained 11½ pounds in nine days in September, 1908, showing much edema. During this time the sugar in the urine fell from 180 gm. to 137 gm. and there was a corresponding lowering of carbohydrates. Diacetic acid was recorded as ++ at the start but on the last day was ++++. There was a minus carbohydrate balance. Sodium bicarbonate was given, 20 gm. daily. There was the merest trace of albumin in the urine and no casts.

CASE 147.—The patient was a man, aged 42, whose weight had fallen from 185 pounds to 151 pounds. He gained 12 pounds in twelve days in June, 1907, and edema appeared. During this time the sugar in the urine fell from 215 gm. to 51 gm. on the eleventh day, and diacetic acid increased from ++ to ++++. There was a minus carbohydrate balance. Sodium bicarbonate was given, 12 gm. daily. The urine showed the merest trace of albumin and no casts. Thirteen months later the patient returned to the hospital in a much worse condition. For convenience the case will be discussed later, but the data are recorded here.

TABLE 1.—CASE 147.

	Urine.			Diet.			
Date 1908.	Diacetic acid.	NH_3 gm.	Total Sugar gm.	Carb. gm.	$NaHCO_3$ gm.	Weight lbs.	Remarks.
2/25	+++	6	300	...	20	.....	
2/27	++++	5	118	92	20	127⅜	
2/28	++++	...	96	92	20	127⅞	Nausea, vomiting and threatening coma.
2/29	++++	...	113	68	24	127	
3/1	++++	...	149	123	24	122⅝	
3/2	++++	...	136	108	20	121⅜	
3/3	++++	...	131	103	20	124⅞	
3/4	++++	...	181	110	20	128	
3/5	++++	...	126	86	20	132⅝	Salt restricted.
3/6	++++	...	141	86	20	133⅝	
3/7	++++	5.6	166	...	20	133⅞	Patient allowed to visit a friend.
3/8	+++	7	229	...	20	133	

CASE 162.—The patient was a man, aged 30, whose weight had fallen from 154 to 113 pounds. He gained 8½ pounds in fourteen days in June, 1907, and edema appeared. The sugar in the urine amounted to 345 gm. about ten days previously, but was much less during the interval between the two dates on which he was weighed. Ammonia was present, 5 gm. Sodium bicarbonate was given, 16 gm. daily. The urine contained a slight trace of albumin and a moderate number

4. von Noorden, Carl: Diabetes Mellitus, E. B. Treat & Co., 1905, p. 193.
5. Die Zuckerkrankheit, ed. 2, 1907, p. 169.
6. Diabetes Mellitus and its Treatment, 1898, p. 227.
7. Diabetes Mellitus, Unterleibskoliken und Oedeme in ihren Wechselbeziehungen, Ztschr. f. klin. Med., 1900, xl., 181.

of casts. Death occurred in coma five and one-half months later.

The factors which appeared most intimately connected with the development of edema in our seven cases were two—the restriction of carbohydrates and the administration of sodium bicarbonate. In our experience, however, the restriction of carbohydrates has never caused the appearance of edema in a mild case of diabetes. We have had an excellent opportunity to collect evidence on this point, because it has been our custom to weigh patients daily during the early period of observation, which is usually a period of restriction of diet as well. If the edema is dependent on restriction of carbohydrates, this must apply only to those cases like ours, which are of a severe type. To this aspect of the question we will later return.

The other factor — sodium bicarbonate — was considered by several of the patients themselves to be the cause of the edema, and for a time this seemed to us to be the most probable explanation. The first observation which threw doubt on this explanation occurred in the course of the treatment of Case 132. This patient gained, between November 14 and November 16 5¼ pounds, although no sodium bicarbonate was administered. During this time the diet was restricted from 215 gm. carbohydrate to 130 gm. Between Nov. 19, 1907, and Dec. 1, 1907, an average of 22 gm. of sodium bicarbonate was given daily, but the weight rose from only 129 to 129¾ pounds.

A further opportunity was afforded of determining the influence of sodium bicarbonate in the production of edema by a study of the following case:

CASE 135.—The patient was a male, 34 years of age, who entered the hospital in January, 1908, in a most pitiable and cachectic condition, his weight having fallen from 138 to 88 pounds. He had been under our observation for nearly a year and a half, having developed diabetes three and one-half years before we first saw him. For a short time previous to admission he had given up on his own account the use of sodium bicarbonate, because he believed it was the cause of his edema. The diet on entrance consisted of milk, 1 pint, cream, ½ pint, fresh butter, 2 ounces, oatmeal (cooked), 1 gill, 4 eggs, meat, 10 ounces, potatoes, 8 ounces, 6 ounces of (cabbage, spinach, lettuce, tomatoes), apple, 4 ounces, orange, 4 ounces, olive oil, 1 ounce—without the addition of salt. It contained approximately 135 gm. carbohydrate, 110 gm. protein and 185 gm. fat. For the first four days no alkali was given. Twenty-five grams of sodium bicarbonate were then added to the diet. This was a little more than the quantity which the patient had taken intermittently for the two years up to the time he had omitted it before coming into the hospital. Two days after he began to take the alkali symptoms of coma became marked, and, despite the fact that the sodium bicarbonate was increased in quantity, death occurred two days later.

Not only was no edema to be noticed during the period of the administration of the alkali, but the weight, which had fallen 2½ pounds during the first four days after entrance, continued to fall, but at a much more rapid rate, namely, 3¼ pounds in the second four days. The quantity of carbohydrate was not reduced in the diet, but the amount of fats and protein was lowered because of the inability of the patient to take so much food. In the alkali period the quantity of liquids ingested was about 50 per cent. greater than during the first period, and exceeded the quantity excreted in the urine by 25 per cent. This was in contrast to the first period, when the quantity of liquids ingested and the volume of urine voided were approximately the same. Plenty of liquid was available, therefore, for the production of edema, yet it did not occur in the presence of sodium bicarbonate and a failing heart. The analytical data are presented in Table 2.

One of the points of interest in Table 2, and one which may have a bearing on the question of edema, is furnished by the chlorin excretion. This changed markedly as soon as sodium bicarbonate was administered, falling from an average of 6.3 gm. daily during the first period to 2 gm. daily in the second period. The constancy in the excretion of nitrogen and phosphates up to the alkali period was notable. As often occurs, the ammonia did not increase even in the presence of coma. The giving of 25 gm. sodium bicarbonate was certainly not sufficient reason for the lack of rise of ammonia with the need of the body for so much more alkali. The acetone and diacetic acid and the β-oxybutyric acid showed well the increasing acidosis, but it is worthy of note that the increase did not take place at first, although there was undoubtedly a restriction of 100 to 200 gm. of carbohydrates as compared with the diet before entrance. The analyses of the β-oxybutyric acid were made by the modification of Magnus-Levy's method recently suggested by Mr. Black. Duplicate analyses presented most satisfactory results, and we can not too highly recommend Mr. Black's procedure, which shortens the time required for the analysis of β-oxybutyric acid to a few hours.

TABLE 2.—CASE 135.

	Intake.						Urine.								
Date. 1908.	$NaHCO_3$ gm.	Carb. gm.	Protein gm.	Fat gm.	Alcohol gm.	Liquids c.c.	Vol. c.c.	N gm.	NH_3 gm.	Acetone and diacetic acid gm.	β-oxy. acid gm.	P_2O_5 gm.	Cl. gm.	Sugar gm.	Weight lbs.
1/26	0	135	110	185	..	3500	3720	21.8	4.2	7.9	29	4.4	8.2	160	88¼
1/27	0	135	110	185	..	3500	3940	19.6	4.3	7.8	29	4.5	6.3	165	89¼
1/28	0	135	110	185	..	3500	3210	20.5	4.4	7.3	24	4.6	5.9	160	86¾
1/29	0	135	90	155	..	3500	3210	19.2	4.1	7.3	26	4.2	4.8	163	85¾
1/30	25	135	70	185	..	3500	3190	16.3	3.5	8.7	33	4.1	1.6	146	85
1/31	25	120	60	95	23	5370	4600	19.1	4.3	12.6	51	5.1	2.3	146	83¼
2/1	37	130	100	130	45	5250	4050	18.7	3.3	10.7	39	4.3	2.0	137	82¼
2/2	52	70	60	95	45	5370	3510	16.0	3.5	10.2	37	3.9	2.1	121	81¾
2/3	..	15	15	30	45	800	360	15.0	...	....	..	...	...	86	....

The observations on the two cases above reported are distinctly against the view that sodium bicarbonate had anything to do with the production of edema in our cases.

The study of the action of sodium bicarbonate in a diabetic individual is difficult because the results of its administration may be so diverse. For example, we know that the administration of sodium bicarbonate to a severe diabetic leads to an increased excretion of β-oxybutyric acid in the form of its salt. This may not be an indifferent matter. Desgrez and Saggio[8] have shown that diacetic acid and more especially β-oxybutyric acid are distinctly harmful to the kidneys. It is therefore readily conceivable that the extra amount of these acids excreted following the use of sodium bicarbonate in severe cases of diabetes may so injure the kidney as

8. Sur la novicité des composés acétoniques, Compt. rend. Soc. de biol., 1907, lxiii, 288. Reviewed in Centralbl. f. Stoffwechsel- u. Verdauungskr., 1908.

to prevent its performing its ordinary functions, such as, for example, the excretion of salt. A retention of salt would of course in turn lead to a retention of water with an increase in body weight. The administration of sodium bicarbonate may on the other hand have a totally different effect, since it is one of the best methods for removing chlorin and with it water from the body. In this event sodium bicarbonate would lower rather than increase body weight. Both of these actions might go on simultaneously. In that event it would depend on the quantity of salt in the body and the degree of injury to the kidneys whether the gain or loss of weight takes place. Still another variable enters into the problem, for both Magnus-Levy and we have observed in the study of patients with fatal diabetic coma that considerable quanitities of chlorin may be excreted by the intestines.

In order further to simplify the question of the etiology of edema in diabetes we determined to note the effect of the withdrawal and addition of salt to the diet of a diabetic patient. A favorable opportunity was afforded by observation of Case 135, above mentioned. The diet, which was constant, contained a comparatively small quantity of chlorin, though an amount amply sufficient for the usual needs of the body. During the first four days of the experiment the chlorin in the urine gradually decreased. This was presumably due to the small amount of chlorin in the diet as compared with that before entrance. The fall in chlorin excretion became much more rapid as soon as alkali was begun. The weights were parallel to the chlorin, falling slowly at first and then rapidly. Edema did not occur in the presence of a restriction of salt although the condition previously found favorable to its appearance —a marked diminution in the carbohydrate intake—was present. The explanation would thus apparently lie in the restriction of the salt in the diet. But the case suggests many interesting questions.

The patient remained in nearly as good condition during the first four days in the hospital as at entrance, but coincident with the administration of sodium bicarbonate, coincident with the fall of chlorin to a daily average of 2 gm., and coincident with the increasing loss of body weight, coma appeared. Might not these four factors be brought into connection? The sodium bicarbonate accelerated the removal of the accessory chlorin and water from the body, and it set free for elimination increased quantities of β-oxybutyric acid. Was not the percentage of this acid thereby increased in the remaining body fluids? In support of this view there are data available which show that the blood of diabetic patients in coma is more concentrated than normal. A diabetic patient on the verge of coma is well known to be in unstable equilibrium. At such a time the removal of nearly all the accessory water from the body must be of serious import.

Suggestive evidence that salt plays an important rôle in the production of edema in severe diabetes was given by Case 147 already reported. An examination of the data displayed in the table of that case will show that when this patient was on the verge of coma, the weight was at the lowest point. On this day in addition to the administration of considerable doses of sodium bicarbonate, as much as this particular patient's stomach would bear, we gave salt solution enemata, and he subsequently took a little more salt in the diet than is the rule. Coincident with his improvement, as was to be expected, there was a gain in weight, but this was so rapid that it is impossible to explain it otherwise than by the retention of water, which was later found by the appearance of edema. The gain in weight ceased when salt in his diet was restricted, although this was not done until he had replaced most of the floating water of the body. The improvement of the patient with comparatively small doses of sodium bicarbonate was unexpected and it suggested that the salt simultaneously administered might have had some contributory effect. It will be remembered in Magnus-Levy's remarkable case (Case 6) recovery from actual coma took place with the administration of large doses of sodium bicarbonate, some of which we infer was dissolved in normal salt solution. It is of interest too that in his case general dropsy, including ascites, developed. There was, however, albumin in the urine of his patient.

If the withdrawal of some of the salt from the diet of a severe case of diabetes prevents the occurrence of edema when the carbohydrates are being restricted, the administration of salt should lead to salt retention and gain in weight. We, therefore, gave salt in doses of 4 gm. twice daily to eight patients with diabetes. The weights of the patients were taken in the same clothes at the same hour (as a rule shortly before a meal) and after urination. For the sake of control the patients were weighed for several days preceding and following the salt period. The data are presented in the form of a table (Table 3). Two of the patients (11 and 112) presented marked acidosis, and it is at once evident that these were the only cases showing a material gain in weight in the salt period. They are patients who clinically correspond exactly with those in whom we previously had noted edema. Patient 105 was a boy

TABLE 3.—ADMINISTRATION OF SALT TO PATIENTS WITH DIABETES.

	Case 11.	Case 112.	Case 155.	Case 8.	Case 105.	Case 186.	Case 194.	Case 163.
Age	49	50	46	69	18	60	13	43
Carb. bal.	—	—60	+40	+35	—	St.+	+20	+87
NH_3	3.3 gm.	3.7 gm.	.....	.....	.....	.....	1.5 gm.	.....
Diacetic acid	++	++	0	0	++++	+	0	0
Weight (lbs.) during Control Period:								
Day 1	147	193	.....	153	111½	.....	.....	.....
2	147	193	173½	152 9/16	112⅔	176¾	110¼	170⅛
3	145	192½	173½	152⅝	111⅝	176¾	111	168½
4	145	193	173½	153	111¼	176¼	110	168¾
Weight (lbs.) during Salt Period:								
Day 5	147½	196¼	173½	153	110	176½	111¼	169
6	149	194	.....	153	110¾	178¼	112⅜	169⅜
7	148	196¼	173¾	152½	111	.....	112¼	169⅞
8	148	197	174½	.....	111⅔	177¾	112¼	170
Weight (lbs.) during Second Control Period:								
Day 9	.....	195½	175	152 1/16	112¼	181	111¼	169⅝
10	148	194	173½	151⅜	112⅔	180	111⅛	169
11	149	193½	173	151½	112½	179	111	169⅞
12	149	.....	173	152⅛	112½	179½	110½	169¼

with advanced diabetes of the severest type. He had not, however, lived on a very restricted diet for some time, and frequently took more than the moderate amount of carbohydrates allowed. Despite the severity of the disease acidosis was not marked, presumably because of his liberal diet. Patient 194 was a young girl with diabetes of only a few months' duration and of a mild form. The youngest patient with diabetes who in our experience has shown edema was 30 years of age. Patients 155, 8, 186 and 163 presented all the requirements for the production of edema, save that their diabetes was of a mild type without acidosis. These patients failed to gain weight in the salt period. These experiments require confirmation, but so far as they go they suggest that salt is an important factor in the edema of diabetic patients.

If one studies the quantity of chlorin eliminated by patients in diabetic coma it will be found as a rule to be slight. This may be due partly to starvation during the last few days of life, partly to the excretion of chlorin by the intestines, and also partly to the use of sodium bicarbonate in considerable amount during the period previous to the onset of coma, as well as to its employment in excessive amount in coma itself. The low chlorin excretion in coma is shown in Table 4.

A study of this table will show that the chlorin was low almost without exception when alkalies were administered, and high in those instances in which no alkalies were given. The only instance (Magnus-Levy, Case 6) in which the chlorin approached normal limits when alkalies were given recovered from the coma. In that case dropsy, including ascites, was present. One explanation of the appearance of coma in a severe case of diabetes mellitus would be as follows: The restriction of the carbohydrates in the diet leads to the non-oxidation of very considerable quantities of β-oxybutyric and diacetic acid, quantities much above those already being formed in the body. The elimination of these acids causes an irritation of the kidneys. This leads to the retention of salt and the production of edema in those individuals whose bodies contain considerable quantities of sodium chlorid. When the chlorin is low in the body, as is frequently the case, due in part to the long-continuous use of sodium bicarbonate, or to the lack of ingestion of food and even partial starvation in the last few days preceding coma, there is no extra salt to be retained, and consequently no edema appears. These latter patients therefore are especially prone to coma because the acids remaining in the body are in a more concentrated solution. Nature on the one hand is making every effort to remove the acids from the body by the kidneys by means of the excretion of large quantities of urine, because only in this way can much β-oxybutyric acid be excreted, while on the other hand she is attempting to retain chlorin and water in the body to protect the normal concentration of body liquids.

TABLE 4.—CHLORIN EXCRETION IN COMA.

Author.	Case.	Duration of coma, days.	Total Cl. in coma, c.c.	Total vol. urine in coma, gm.	Remarks.
Magnus-Levy..	1	3	18.7	14,050	No alk. Died next day.
Magnus-Levy..	2	1½	1.30	6,590	Alk. R. Died.
Magnus-Levy..	3	3	18.49	10,060	No alk. Died.
Magnus-Levy..	5	2	5.24	5,400	Alk. R. Died next day.
Magnus-Levy..	6	5	13.22	36,825	500 gm. $NaHCO_3$. Recovered.
.....	.	6	14.40	9,475	Out of coma. Ascites.
.....	.	4	15.38	17,350	420 gm. $NaHCO_3$. Coma. Recovered.
Joslin.....	4	3	3.9	23,350	Alk. R. Died next day.
Joslin.....135		3	6.4	15,990	Alk. R. Died next day.

The treatment of diabetic coma by the use of sodium bicarbonate has afforded unsatisfactory results, but prophylactically the use of alkalies appears to be of undoubted value. From the observations and experiments above recounted it would seem advisable to note the chlorin excretion in severe cases of diabetes, and when it is found low or when weight is falling yet the actual net caloric value of the food is sufficient, to add salt to the diet. In actual coma it would appear advantageous not only to administer large doses of alkalies, but also to give with them moderate quantities of salt. It is perfectly obvious that too much salt might do quite as much harm as too little, because by its administration too much liquid might be retained in the body, and the β-oxybutyric acid fail in excretion. Moderate quantities, however, would appear theoretically to be indicated. Only last year Folin suggested that the exclusive administration of one form of alkali was irrational and recommended a combination of salts.

CONCLUSIONS.

1. The withdrawal of salt from the body does not lead to the production of acid intoxication of the diabetic type nor does it increase an acidosis already existing.

2. Edema in cases of diabetes mellitus presenting marked acidosis frequently occurs coincident with restriction of the carbohydrates in the diet.

3. This edema is not due to the simultaneous administration of sodium bicarbonate.

4. The edema is probably caused by the increased production of acids causing injury to the kidneys during excretion, thereby leading to retention of salt.

5. Patients in diabetic coma almost without exception present no signs of edema, and show diminished chlorin in the urine if alkalies are given.

6. The careful administration of salt along with sodium bicarbonate is recommended in the prophylactic and actual treatment of diabetic coma.

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DISCUSSION.

DR. ALEXANDER LAMBERT, New York: The cases that cause us the greatest worry and require the closest attention are those of diabetes mellitus in most unstable equilibrium. It would be interesting to know whether Dr. Joslin noticed at some time a diminution of the excretion and whether, in the slow drying-out process which the system must necessarily undergo, the amount of thirst diminished as the edema came on and the diminution in the water became apparent. In a discussion the previous evening the question came up in regard to sudden changes in diet in diabetes. I have never hesitated in making these sudden changes in diet, because I have not, as a rule, given alkali; whereas those who give alkalies in a patient with a severe acidosis find it unwise to make these sudden changes. Changing the salt content of the diet, the sodium chlorid and the sodium bicarbonate must be of great moment to these people. I have never seen anything but benefit result from these sudden changes in diet when I did not give alkalies, when the indications were evident, of course. In cases of long standing one can not hold the diabetic to too severe a diet. When too low a diet is given acidosis in many cases may come on, or be most prone to come on. It is hard to keep a diabetic contented with a restricted diet. If by the use of salt, as Dr. Joslin has suggested, we can relieve patients of some of their symptoms, keep them in better equilibrium, and keep the equilibrium in a more stable condition, I think that the observations made by Dr. Joslin are most valuable.

DR. J. M. ALLEN, Liberty, Mo.: Over thirty years ago I found chronic inflammation and ulceration of the duodenum on postmortem examination in two patients that died from diabetes mellitus. Since then I have made postmortems in five additional cases, and in each found chronic inflammation and ulceration of the duodenum and no other pathologic condition, except the ordinary changes to be found in the kidney. In all I have treated twenty-seven cases; the clinical symptoms of each were the same as those of which I made postmortem examinations. Hence I conclude that diabetes mellitus is the result of faulty metabolism in the duodenum, caused by the pathologic condition mentioned. The practical abilities of the old masters in our profession are nowhere indicated with more force than in the diet list given to diabetics by Watson, Wood, Flint and others, which mainly consisted in albuminoids, thereby requiring but little function of the duodenum, and lessening the possibility of physiologic hyperemia. I read a paper on this subject and along these lines before the American Medical Association at its semi-centennial meeting at Philadelphia.

DR. G. W. MCCASKEY, Fort Wayne, Ind.: The clinical importance of metabolism has increased greatly during the past few years, and the entire question of metabolism has assumed a very important place. One must look to the test-tube for a solution of many problems in connection with clinical medicine. I was particularly impressed by what Dr. Joslin stated about the four cases of severe diabetes in which there was a chlorid retention with a serous effusion; whereas in the mild cases there was none. This seems to me to point to the existence of an impaired renal permeability, at least for salines. It has been shown by von Noorden that as diabetes continues on for a period of time the sugar in the blood must be increased considerably over 0.1 per cent. before glycosuria takes place. Normally when there is over 0.1 per cent. glycosuria ensues. Whether this is conservative on the part of Nature, or whether it is the result of the chronic irritation, there is diminished permeability of the renal epithelium and the sugars and chlorids gradually increase in the blood.

DR. ELLIOT P. JOSLIN, Boston: With the diminution in the excretion of urine there is a corresponding diminution in thirst. Recently Dr. Goodall and I published in the *Boston Medical and Surgical Journal* personal observations on the manner in which acidosis affects young and old diabetic patients. We found that the latter succumbed to a degree of acidosis which young individuals could stand well. When an acidosis developed in a person of advanced years, or one past middle life, the prospect for life was less than when a corresponding degree of acidosis occurred in a young individual. Presumably it depended on the condition of the kidneys and their vulnerability. It is also interesting to know that it was only in the young persons that recovery from diabetic coma often occurred. The young person was capable of voiding large quantities of urine and so was able to wash the acids from the body. In one case nine quarts of urine were voided during recovery.

ABDOMINAL CERVICAL CESAREAN SECTION.*

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Obstetric therapy during the last twenty years has entered a new phase by the substitution of obstetric pubiotomy in the place of symphyseotomy. In the same way those methods of delivery which aim to extract the child by means of incision of the uterus have been markedly improved and enlarged.

The so-called vaginal Cesarean section of Dührssen, better termed hysterotomy, has opened a large field in obstetric methods. This operation has shown good results in cases in which the indication for rapid delivery, especially in eclampsia and in prolapse of the cord, necessitates such measures. Likewise the true Cesarean section, that is, delivery through incision of the uterus by the abdominal route, necessitated by narrowing of the bony pelvis, or because of stenosis of the vagina and cervix, has undergone changes in the last decade that are by no means inconsiderable.

Among these new methods Cesarean section, performed according to Fritsch, is of advantage because it consists of transverse incision through the fundus. By this means the placental site is most surely avoided, and the method also admits of a more rapid hemostasis, because the suture of the uterine wall is performed by ligatures inserted vertical to the course of the blood vessels.

Lately an attempt has been made to enlarge the scope of the Cesarean section with the view of further safety to the child's life by the introduction of cervical Cesarean section through the abdomen. This new method is to be credited to Frank of Cologne. The fundamental idea was not the same as that involved in the practice of making an incision into the lower uterine segment in order to avoid the placental site, but is based on the effort to extend the indication for Cesarean section to infected cases. The results of Cesarean section in the last few years have only become so excellent after we had learned to avoid unclean cases and to confine our operations to such cases as presented a more or less complete guaranty of good asepsis; therefore, those clinics especially whose material consisted exclusively of waiting women show brilliant results, with a maternal mortality of only zero to 1 per cent.

On the other hand, those operators who have dealt with women previously subjected to the more or less frequent examination of midwives, or to attempts at delivery at the hands of the general practitioner, in spite of good asepsis, still report a mortality of 10 per cent.

Frank's idea was to operate extraperitoneally. He was followed by Veit and Sellheim, who attempt to modify his method in another direction. While Frank incised both the abdominal parietes and uterus transversely immediately above the symphysis, Veit planned his incision through the median line, and Sellheim adopted my transverse fascial incision through the abdomen. All three operators direct their efforts to protecting the peritoneal cavity from infectious material—especially from the amniotic fluid—by operating either entirely extraperitoneally or subperitoneally. They do this by reflecting the peritoneum from the bladder and cervix, entering the uterus below the plica vesico-uterina (Frank, Sellheim).

The same result is reached by transperitoneal operation, the parietal peritoneum being incised above the bladder. The peritoneum covering the cervix is then severed, and before the uterus is opened the visceral and the parietal peritoneal surfaces are united either by suture or forceps (Veit, also Frank and Sellheim).

A number of patients have recovered after this method of operation. Of course it is questionable whether these patients would not have recovered just as well if the classic Cesarean section had been employed; the results, however, have not appealed to me in favor of this idea. Baumm and Sellheim have already reported deaths due to sepsis.

I do not doubt that other, as yet unpublished, cases had a fatal outcome. We are all well aware how difficult

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

it is to distinguish between true infection and sapremic intoxication, or let us say for the sake of brevity, to distinguish dangerous from harmless microbic invasion *sub partu,* and, therefore, be in a position to form a correct prognosis. For a true infection may remain localized and consequently lead to a favorable outcome, while a sapremic intoxication may end fatally by producing general poisoning. The sharp distinction between infection and intoxication is theoretic and requires revision.

It is impossible in cases of fever *sub partu* to announce with certainty that this case is one of septic infection and, therefore, extremely serious, or that case is sapremic and, therefore, harmless. It is true that the experienced diagnostician will be guided in some cases by the general impression obtained from seeing the febrile patient, but such impressions can be deceptive. The simplest case would be one in which we know how the pregnant woman has been treated in the last few days preceding labor. For instance, when one is dealing with waiting women, who for many days before labor have been kept scrupulously clean, and during labor have either not been examined at all or only under conditions of strictest asepsis. If in such cases a rise of temperature *sub partu* occurs one can assume that this in general is of harmless nature; but even then it is possible to be deceived, as I have seen from personal experience.

It is known that pregnant women examine themselves, or allow themselves to be examined by other women, and thus infection can occur. The course of the infection is then puzzling to us, because the fact of its examination by unskilled hands has been concealed.

It is always well when dealing with febrile patients, or even with those in whom no fever is present, to consider them as infected, or at least as suspicious, providing we elicit the fact that the woman has been in labor for a long time or has been subjected to repeated examinations on the part of physicians or midwives whose asepsis is not reliable. If with these precautions we undertake Cesarean section, no matter by what method, there is no reason why a considerable percentage should not have a happy outcome, simply because no infection was present. On the other hand, it is equally true that in the fatal cases death might have occurred even if the delivery had been obtained through perforation instead of by Cesarean section, because we are dealing with a true, septic, progressive infection. But my standpoint is that it is not a matter of indifference whether the uterus of a febrile patient is left untouched or whether a complicated wound is made. The gravity of the prognosis is doubtless increased by the operation.

In this connection it is not alone the direct infection of the peritoneum with bacteria that must be taken into consideration, but also the fact that stagnating blood in both the uterine wound and in the uterine cavity furnishes a nutritive medium for the growth of the bacteria.

As important as it is to protect the peritoneal cavity from infected amniotic fluid, which is quite feasible by means of the above mentioned methods of Cesarean section, I am unwilling to acknowledge that this suffices to prevent fatal peritonitis. The same applies to the wound of the abdominal wall, which is the more imperiled the more complicated this wound is. To these objections others must be added. The fundamental thought of Frank is to protect the peritoneal cavity against the infectious wound area. The question then arises, "Is this technically possible?"

Complete subperitoneal operation, such as is recommended by Frank and Sellheim, is at times not feasible, as I have found by experience, and as is acknowledged by both these authors. They, therefore, advise in such cases—and Veit has adopted this in his longitudinal incision—cutting through the parietal peritoneum and the cervix, to undermine them, and to unite them by means of forceps. This produces a closed subperitoneal space, to which access to the cervix is obtained. Thus somewhat greater safety against infection of the peritoneal cavity is secured. But this is not an absolute guaranty, as infectious bacteria are known to break through such artificial barriers. It is, therefore, logical and right that Frank, who produces a broad skin and muscle wound, and, in addition, opens a large, subperitoneal, cellular area, should advocate open wound treatment and drainage. The abdominal wound is equally endangered if infection arises after my transverse fascial incision.

Sellheim has frankly acknowledged that he made a mistake in one fatal case by omitting drainage, but experience has shown that in most cases such drainage is entirely unnecessary. The same difficulty which confronts us in deciding the question whether in a given febrile case infection is present or not confronts us in deciding whether the wound is to be left open or the peritoneal cavity completely closed. The drainage entails a further risk, as it favors the likelihood of abdominal hernia as well as the consequence of abnormal adhesions in the cervical region with the abdominal wall, by no means inconsequential to the future well-being of the patient.

It is questionable whether we are justified in exposing the mother to all the above dangers in order merely to save the life of the child, which, as we know, is extremely jeopardized in the presence of infected amniotic fluid. I would like to answer this question in the negative and to advise that in all cases in which infection may surely be assumed, or in which a distinct suspicion of it is justified, to sacrifice the child by perforation, or where the pelvis is too narrow, to resort to Cesarean section, after the method of Porro.

I believe that our modern attempts to save the child's life shoot beyond the mark, and, therefore, at least for the present, I must refrain from endorsing the extraperitoneal Cesarean section. But I am not prepared to discard Frank's idea completely in those cases in which the fever in a pregnant woman gives the general impression that the rise of temperature is harmless. I would advise, however, not to operate subperitoneally, but transperitoneally.

My experience in the realm of abdominal surgery has given me great confidence in the capacity of the undamaged peritoneum to destroy bacteria. It is well known that the peritoneum possesses these faculties to a much higher degree than the widely opened connective tissue surfaces.

Attempts to protect the body against invasion of bacteria within the abdominal cavity can be made by the injection of oil into the peritoneal cavity during the Cesarean section, as I have proposed, based on the experimental work of Glimm. That this measure is capable of preventing fatal infection has been shown experimentally by Glimm as well as the fact that the injection of oil, at least into guinea-pigs, is harmless.[1] My own clinical experience has as yet been too scanty to

1. Reported from my clinic by Hoehne.

permit of any final judgment, especially as I have been unable to apply the method in Cesarean section. So far as I am concerned, I would not hesitate to perform transperitoneal Cesarean section, combined with the injection of oil, in cases of apparently harmless fever and a living child. The proper dose consists of 200 c.c. of olive oil, which has been sterilized for half an hour on a water bath at a temperature of 100 C. (212 F.). This fluid is simply poured into the abdomen by means of an irrigator during the course of the operation.

Concerning the technic of the Cesarean section, I have rejected the extraperitoneal method of Frank, Veit and Sellheim; but the work of these operators has taught me that the classic Cesarean section, as well as the modification of Fritsch, can be improved by employing the cervical incision. My technic which I have reported[2] resembles that of Sellheim, but differs from it basically in that I operate transperitoneally.

To recapitulate, my technic is as follows: A typical transverse incision, about 15 cm. long, is made at the level of the anterior superior iliac spines; the aponeurosis of the rectus muscle is reflected up to the symphysis and down to the umbilicus. The peritoneum is then incised longitudinally for a distance of about 10 cm. Then a careful incision of the cervix is made between the bladder reflection and the contraction ring. The peritoneum is carefully guarded against contamination of amniotic fluid by means of pads, etc.

If one does not operate too early, that is, if one waits until the cervix has dilated and been partly absorbed, then the bladder rests merely against the vagina and no longer against the cervix. It is then unnecessary to separate the bladder from its underlying parts, as one has sufficient room to deliver the child by the direct cervical incision.

Should the plica vesico-uterina still be high in situation, this fold is incised, separated from the bladder and the bladder pushed down, exactly as in the abdominal operation for fibroid uterus. The child is now delivered by means of lateral pressure or extracted by the feet. After a short pause, which is occupied with cleansing, changing pads, etc., the placenta is delivered either spontaneously or by means of pressure exerted on the fundus (through the abdominal wall) similar to its ordinary delivery. The cervical wound is sutured in two layers and a typical closure of the abdominal wall is made. I have employed this method so far in one case with recovery. Rubeska reports a similar case. The method has numerous advantages over the classical operation of Saenger and that of Fritsch.

1. All the advantages inherent in my transverse fascial incision, that is, (a) the morbidity, and with it the mortality, has diminished, because the uterus remains *in situ*, and the rest of the peritoneal cavity is guarded from contamination from without; (b) the danger of a ventral hernia is eliminated; (c) the patient is able to leave her bed early (in normal cases from the third day on), which shortens the convalescence considerably.

2. Further advantages are due to the situation of the uterine wound. In most cases the hemorrhage is minimal—with the exception of placenta prævia. (a) No large vessels are situated within reach of the incision; (b) detachment of the placenta is entirely left to Nature.

The course of labor resembles, as Sellheim has justly said, more closely a physiologic process. My operation excels that of Sellheim because of greater simplicity and the avoidance of all those objections previously discussed in criticising the extraperitoneal method of Frank and Veit. My operation also can be applied in cases in which the mother has an apparently harmless fever, and in which the life of the child must consequently receive due consideration. In these cases the oil injections are to be employed immediately after the extraction of the child.

The application of the cervical Cesarean section is extensive. First, in contracted pelvis, the indication for pubiotomy must, however, not be narrowed, as the excellent results recently obtained should be taken into consideration. Only in cases in which pubiotomy no longer promises a sure chance for the child is Cesarean section to be undertaken. Cases of stenosis due to scars or neoplasms of the internal genitals stand on a similar plane as contracted pelvis, unless some radical tumor operation (myoma) indicates a different technic. Further, cervical Cesarean section is applicable in cases of threatened rupture of the uterus with living child, unless an already existing infection is present as contraindication. This is exclusive of the previously mentioned cases of contracted pelvis. Unlike Sellheim, I would like to emphasize the indications for vaginal Cesarean section, which are distinctly special. In fact, the results of this method have been good.

In conclusion I would say that the extraperitoneal method of Cesarean section should be discarded, because it is harmful to the mother and of uncertain value, at least in febrile cases, to the child. In contrast to this, transperitoneal cervical Cesarean section marks a distinct progress. In some cases in which there is fever in the mother it is indicated, but must then be combined with a prophylactic injection of oil into the peritoneal cavity.

2. Zentralblatt für Gyn., 1908, No. 10.

ABDOMINAL CESAREAN SECTION,

AS PERFORMED AT THE SOCIETY OF THE LYING-IN HOSPITAL OF THE CITY OF NEW YORK. WITH AN ANALYSIS OF 186 CASES.*

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In presenting this paper for consideration, it is my intention to take up, so far as the time allowed me will permit, the question of abdominal Cesarean section, with regard to the indications for its employment, the choice of time for its use, the technic of the operation, and the results obtained. In a general paper of this description, it would be trying to the patience, as well as unsuitable, to give more than a passing consideration to the details of the subject, the main object being to show the results obtained from a large number of sections, together with certain especial points in the technic of the operation.

The series of cases reported comprise the total number done in the Lying-in Hospital during the eighteen years of its existence, and are, therefore, in no sense of the word, selected cases. It will be my endeavor to show some of the dangers, as well as the advantages of this method of delivery.

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INDICATIONS FOR OPERATION.

Broadly speaking, Cesarean section by the abdominal route is indicated in all cases where there is a degree of obstruction to delivery, either on the part of the mother or the child, sufficient to render such delivery impossible with best results to both, it being understood that the child is viable and that the condition of the mother is such that she will survive the operation. Such indications may be classified as follows:

1. Deformed pelvis.
2. Placenta prævia.
3. Eclampsia with a firm, undilated cervix, and complicated or not with the two previous causes mentioned.
4. Neoplasms of the uterus, such as fibroids, carcinoma, etc.
5. Vaginal deformities, such as marked contraction from scars, tumors, etc.
6. An excessively large child.

Taking these up in order, by the term "deformed pelvis" I mean any pelvis which is so contracted as to render impossible the passage of a normal living child. This may express itself in the form of a flat, justominor, rachitic, Naegele, Roberts or osteomalacic pelvis, the important feature for the obstetrician to realize being that in the individual pelvis the particular fetus will not come through alive, or without extreme damage to the mother or child or both. The day is past when we do Cesarean section simply because the true conjugate is shorter than normal, for we have learned that in some cases, notably in the type known as the Roberts pelvis, the true conjugate is not only not diminished, but may be even longer than normal, and yet delivery by the natural route be impossible on account of the amount of the contraction at the sides. In short, then, the surgeon must train his hand by frequent examinations to judge, first, the size of the pelvis and, second, the size of the fetus, and, lastly, he must be able to form an opinion as to the relations which the two bear to each other, if he expects to have a favorable outcome to his cases. These considerations, taken in conjunction with the apparent physical force of the mother and such supplementary information as the history of previous difficult labors will form the means for his decision for or against Cesarean section in an individual case.

Regarding the utility of this operation in placenta prævia, it is my belief, as expressed in print[1] some months ago, that in certain cases of placenta prævia, with a central implantation, in the presence of a firm, undilated os, where the soft parts are firm and unyielding, less damage will be done to the mother, and we shall be more certain of securing a living child by a timely Cesarean than by resorting to the other usual methods of delivery. The mortality in this condition, as shown in the article just mentioned, is, under the best circumstances in hospital practice, almost 18 per cent. for the mother and over 40 per cent. for the child, while the morbidity (maternal) on account of hemorrhage, laceration and possible subsequent infection is very great. It would seem as if any methods of delivery which offered as a result 40 per cent. of deaths were open to a good deal of criticism.

With regard to eclampsia, under similar circumstances, a better result may be expected than in many cases of forced delivery.

Concerning the other causes mentioned, time will not permit of more than a passing mention, but it certainly must be obvious that when neoplasms fill the lower segment of the uterus or vagina, when scars have contracted the vagina to a point where the passage of a child can not but cause grave destruction to the soft parts, or where the size of the child is out of all proportion to the size of the pelvis, especially if the head be one of the type not infrequently encountered, in which the ossification seems to be premature, and the head is firm and unlikely to mold, in these cases, too, it would surely seem as if an elective Cesarean section, done by a competent operator, was the operation of choice.

1. Bulletin of Lying-In Hospital, December, 1907.

TIME OF OPERATION.

It has been our custom at the Lying-in Hospital to allow the patient to go into labor sufficiently to secure some dilation of the os, thereby facilitating drainage, and to determine whether or not the head will make an attempt to engage. This also has the advantage of allowing us to be certain that the woman is at or about term, which in occasional cases, notwithstanding opinions to the contrary, is not an easy matter to determine. Recent articles have condemned the operation after the onset of labor, but, as I shall hope to show later, this form of procedure is not unsatisfactory in its results. It is freely admitted that where we can have our choice the time of election is just before or at the beginning of labor. In a service such as we have at the New York Lying-in Hospital, however, this choice is not always possible, as the patient is often not seen until she is well advanced in labor. Then, with a viable fetus, we have only the operations of hebotomy, symphyseotomy, craniotomy on the living child, or Cesarean section from which to choose. Symphyseotomy has been universally given up, and the published results of hebotomy are not, to our minds, very encouraging, containing, as they do, reports of tardy and severe convalescences often with protracted recoveries and considerable damage to the mother. While at our institution we have as yet done no hebotomies, we do not yet feel that we are justified in performing the operation. This leaves us with nothing then but a craniotomy on the living child, or a Cesarean section, and up to the present we prefer in most cases to take the chance of the section. It is true that we may possibly have a fatal result, but that is not a reason for relegating the operation to the background, for we shall always have to take a certain number of chances in surgery. No well-grounded surgeon would think of refusing to operate on a severe case of appendicitis simply because statistics showed that he got better results in the interval cases. Why, then, should we refuse to do an operation to save the life of the child when we do not know that the mother will not recover and are practically certain that the child will be born alive? Here, as in other cases, the discriminating judgment of the operator, based on knowledge obtainable only by experience, must determine which cases are and which are not suitable for operation.

OPERATIVE TECHNIC.

With regard to the operative technic, I can do no better than to quote from an article[2] by Dr. Asa Barnes Davis of our attending staff. He says, after describing the usual preparation for a laparotomy:

> The abdominal cavity is opened by a median incision 12 cm. in length, extending from above downward to the umbilicus. The fundus of the uterus is found directly under this wound. If dextro torsion, which is frequently present, occurs, the

2. Lying-In Hospital Bulletin, December, 1905.

uterus is manually adjusted so that the anterior uterine wall faces forward. The abdominal cavity is then walled off by means of three or four moist gauze pads, wet in salt solution. This leaves only a small area of the uterus exposed to view. [It is understood that the uterus is not delivered from the abdominal cavity.—R. M.] An assistant now places a hand at either side of the abdominal wall, near the wound and well backward, so regulating his pressure that the uterus remains in place during the process of being emptied, and afterward until the deep sutures are tied. A median incision, which begins well up at the fundus and extends downward so that it is a little longer than the abdominal incision, is made. This incision should be made carefully so that the amniotic cavity is not opened. Should the placenta be found situated directly under the wound, it is better to cut or tear directly through it. If, however, the membranes present, it has been found advisable to sweep the hand quickly between them and the inner surface of the uterus, in order to prevent adhering of the membranes. The lower extremity of the child, which is most readily found, is grasped and practically a breech extraction is done, the after-coming head being delivered by the Smellie-Veit maneuver. The cord is clamped and cut by an assistant, and the child is carried from the room, in order to avoid confusion while establishing respiration. A double tenaculum is now placed on either edge of the uterine wound at its upper angle to prevent the uterus from slipping down into the wound, the uterus is emptied of any clots which may have formed, also of the placenta, and with as little delay as possible the deep interrupted sutures of heavy chromic catgut are placed; each suture is inserted about one centimeter distant from the edge of the uterine wound, carried down to the endometrium, and passed through the opposite side in reverse order. After these sutures are placed, being tied as they are put in, a continuous suture of fine catgut is used to bury the first row of sutures, and brings the peritoneum into apposition. The sponges are now removed, and the abdomen closed in layers in the usual manner.

A dry dressing is applied which is not disturbed until the eighth day when the sutures are removed. The patients are allowed to sit up at any time after the tenth day and always before the fourteenth day, depending on the involution of the uterus and the condition of the wound.

RESULTS.

With the foregoing observations on indications, and description of the technic, the results obtained in this series of 186 cases may be reviewed.

Out of the total number, thirty mothers died, showing an apparent mortality of 16.15 per cent. When, however, we come to analyze the actual cause of death we shall see that the percentage which can actually be attributed to the Cesarean section is in reality very much lower. Of these women, three died of postpartum eclampsia, six of pneumonia, one each of suppression of urine, shock following a low rupture of the uterus before admission, nephritis, pulmonary embolism, carcinoma, intestinal obstruction, acute dilatation of the stomach, asphyxia from the anesthetic and paraplegia. One was unaccounted for, two died of shock following the operation. The remaining nine died of septic peritonitis. These had all been subjected to more or less manipulation before entering the hospital, and in all cases cultures taken from the vagina and cervix showed streptococci.

These patients were operated on with the hope of saving the life of the child, with the result that out of the whole series of thirty deaths of mothers there were but four still-births.

It seems fair to exclude from the mortality statistics cases in which death was not directly due to Cesarean section, and while the argument may be used that if the patient had not undergone the operation she might not have died, still it hardly seems fair to include deaths from anesthesia, nephritis, Pott's disease with paraplegia, postpartum eclampsia and the other causes already mentioned, since these might have caused the death under any circumstances. Indeed, some of the patients cited would surely have died in a short time, and the operation was done only in the hope of saving the child. Accordingly, then, on account of the operation of Cesarean section *per se,* the real mortality figures would seem to be those of the patients that died of sepsis. Of these we have nine, which gives us a mortality for the operation of only 4.08 per cent., not an unsatisfactory showing.

The total number of still-births in the whole series was thirteen, or 6.9 per cent. It is interesting to note that eleven of these still-births occurred in the first seventy-eight cases, and that in the last 108 operations we have had only two still-births.

The indication for operation in 162 cases was a deformed pelvis, and the remaining twenty-four operations were for malignant growth, atresia of the vagina, impacted face presentations, eclampsia, central placenta prævia, of which latter there were two cases, with a living mother and child resulting in each instance, disproportionately large head and impacted shoulder. The membranes were ruptured before operation, and the os uteri was more than two fingers dilated in 124 cases.

In all the instances but one of death from sepsis the membranes were ruptured, the patient had had outside manipulation, and had been a long time in labor.

SUMMARY.

With these necessarily brief observations I will conclude with what seem to be the main points brought out by a study of this series of cases:

1. Cesarean section is the operation of choice when the obstruction to delivery is such that a viable fetus can not be delivered by the normal passages and the mother offers a fair chance of recovery.

2. This obstruction need not of necessity be a deformity of the bony pelvis, but may be caused in several other ways, as indicated above.

3. While elective Cesarean section just before labor or at the very beginning is desirable, the fact that the patient has been for some time in labor, does not in itself preclude the possibility of doing the operation.

4. The operation requires a particular technic, with skilled assistants, to get the best results, which makes it undesirable to undertake it unless the conditions are satisfactory.

5. These special points in technic are:
   a. The high incision.
   b. The non-delivery of the uterus from the abdominal cavity.
   c. The absence of any method of constriction to prevent bleeding, this not being necessary.
   d. The method of suture described.

6. Where the conditions here described exist, and excluding patients who would die whether they had a Cesarean section or not, the results should show a maternal mortality of not much more than 4 per cent. of the cases and a still-birth percentage of almost nothing.

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DISCUSSION.

ON PAPERS OF DRS. PFANNENSTIEL AND M'PHERSON.

DR. W. H. WATHEN, Louisville: Twenty-five years ago, before the Section on Obstetrics of this Association, I read a paper, stating that the time would come when no man would be justified by the medical profession, either from a scientific or from a moral aspect, in performing craniotomy on a living child. I am glad to see that that principle has now been recognized. There is no excuse whatever for performing craniotomy on a living child. It is a more difficult, more dangerous operation than even the old classical Cesarean section. It destroys the lives of all the children and of many of the mothers, whereas Cesarean section, if the woman is brought in a reasonably good condition nearly to term, saves the lives of nearly every woman and child. We sometimes lose children because we are compelled to operate before the child is entirely viable, but with the modern methods of incubation many of the children are saved. Recently I operated in two cases in which I lost the children because the operation was a necessity when viability was doubtful. One was the case of a woman on whom I operated because of total obstruction of gas and feces. She had been in premature labor twenty-four hours. A large myoma filled the entire pelvis so that the cervix could not be felt. The child was removed barely alive, but did not survive more than four or five hours. The uterus and the fibroid tumor were removed. The second case was one of placenta prævia of about the same term of pregnancy. The child was removed and lived for about the same length of time. In both cases, I believe, with the modern methods of caring for the child, it would have been saved, but in the hurry to operate to save the life of the mothers the best incubators could not possibly be had. Both mothers made a prompt recovery. I am in favor of Cesarean section in nearly every case of well-marked placenta prævia as an operation of election in the interest of both the mother and the child. These operations are more easily performed than of most any other major abdominal operation. The simple Cesarean operation without removal of the uterus is a very slight affair with an experienced abdominal surgeon. If there is a contraction of the pelvis, preventing the delivery of a healthy child, the uterus should be removed, and it can be removed in about half the time that a uterus can with a myoma because of the relaxed condition of the structures. If there be a fibroid tumor it ought to be removed, and it can be removed much more easily than an ordinary fibroma. I am glad to have heard of the 180 cases with the beautiful results reported by the speaker from New York. The time will come when, if we can make a timely diagnosis and carry these patients up to labor, with operation under favorable conditions in a hospital, the mortality will be practically nil.

PROF. AUGUST MARTIN: A new operation must be recommended to general practice with some reserve, but hardly any new operation has been based on better anatomic conditions than this one; not only is it true that in the median line of the uterus in front and behind we do not meet large vessels, but also that the whole situation of these parts in this stage of parturition in which the operation is usually indicated is in a better condition for operation than any other. If the anterior lip is split, in most instances one does not meet the bladder nor the peritoneum. That is the point to be avoided. There are some peculiar conditions, but in most cases these dangers are avoided.

The vaginal Cesarean section is not an operation that can be made or indicated when there is pelvic contraction. There are different indications for vaginal section, but there is no contention that this is an operation of emergency. If there is time, it is far better to reduce uterine contractions and dilate the uterus by natural procedure and deliver the child. But there are, indeed, sufficient cases of emergency, and in these vaginal section is better than any other way. I am particularly disinclined to the Bossi instrument. Dr. McPherson believes this operation to be rather dangerous for its morbidity and mortality. As far as I know, experience indicates that not only in the hands of the specialist, but also in the hands of many obstetricians this operation is a very good one. New operations must be introduced into practice by teaching, and in many clinical wards, as far as universities are concerned, our students have ample opportunity to see these operations. In every instance in which I have operated before my students they are astonished to see the simplicity of the operation. It is striking to see that the vaginal wall separates very easily. It is possible to separate as far as that part where one can take hold of the head by forceps or perform turning and the deliverance of the child. In my early experience I carefully watched the bladder and did not have any difficulty, but the most interesting part to me was the peritoneum. In most of these instances we do not meet the peritoneum, even if we have to go on incising the uterine wall. It is astonishing to see that we can go very high into the uterine wall without injuring the peritoneum. The opening of the uterus is, in fact, very easy and the delivery is in the same way very easy.

Concerning the repair it is equally astonishing to see how we can bring down all these parts and secure this wound by a running suture in the mucous lining and by another pelvic suture which closes the outer surface of the colum uteri and catches the base of the bladder, leaving at the very end in the vaginal wall a small wound which is shut at once with a lower suture. So the technic is, indeed, a simple one. As far as I have seen, an obstetrician who is accustomed to do any obstetrical operation is competent also to do a vaginal operation. Asepsis in the beginning seemed to be a difficult task, but it needed only a few years to become universal. Another difficulty in the way of the vaginal operation is the narrowness of the outlet. The reason for this narrowness is the more obvious since the cervix uteri is not dilated. The life of the mother or the child forces us to deliver at once. It has been said that the narrowness of the parts is a great impediment. This can be avoided by cutting up the left or the right side of the vaginal wall, not in the median line, which gives bad cicatrization, but cutting from the end of the nymphæ up to the vault so that the full hand can be inserted. The uterus is opened and delivery and closure of this wound are made, and these patients, so far as I have seen, made an excellent recovery if not infected before. I ask permission to give these remarks because of my conviction that the vaginal operation in this way is one of the best we do in obstetrics, and that in doing this we save more lives of mothers and children than in any other way.

DR. J. B. DE LEE, Chicago: The indications for Cesarean section should be enlarged. There is no doubt that the danger of opening the abdomen in obstetric cases is greater than it is in other cases, but why this is so we can not understand. That peritonitis follows abdominal operations more often when a woman has been in labor than it follows in cases of similar gravity and other surgical complications is a certainty in my experience.

The attempt to increase the chances for the child is a most commendable one. Every obstetrician abhors the operation of craniotomy and seeks by other means to increase the number of living children in his obstetric cases. In order to improve the mortality of Cesarean section, we should seek to improve the conditions under which the operation is done. One of the means of improving the conditions is by making the incision in the uterus in the lower part of the organ, and therefore in the lower part of the abdomen, because the lower part is less liable to infection, the intestines come less into play, and there is less interference with the bowel when the lower part of the pelvis is invaded. To my mind, this is the only advantage of the operation as Professor Pfannenstiel has described it. The danger of infection in Cesarean section must always be reckoned with, because we do not know when it is present. No clinical, no bacteriologic test, will give any information in such cases. Craniotomy, however, on the dying child, still has a place in obstetric practice. Let us save the child's life by doing better obstetrics under the following conditions, and the number of children saved will be ten times greater than the number of children saved by Cesarean section and other operations of this class. The indications for Cesa

rean section in a general practitioner's work are so rare that the number of children saved in this way is very small. If the general practitioner will try to preserve the child's life in the following every-day complications, he will save a large number of them: 1. A perfectly healthy woman with a large pelvis and a normal child with a somewhat more resistant perineum than usual. The practitioner should give the perineum time to dilate, restrict the use of forceps, watch carefully the child's heart, and at the first indication of danger interfere. A large number of children will thus be saved who otherwise would be killed by forceps. 2. Occipito-posterior positions in perfectly healthy women, with normal babies and everything normal, except the occipito-posterior position. Let the physician here, instead of using the obstetric forceps, high or low, with the exhibition of brute force, carefully watch the progress of Nature, study the mechanism, and by some manipulations with his hand restore the normal position or aid the normal rotation. He will in this way save a large number of children. 3. Let him observe a watchful course of treatment in face presentation and only interfere in the presence of disproportion and in the indication of danger to the child. 4. In prolapse of the cord let him adopt some of the operations suggested, particularly the vaginal Cesarean section, or let him try the colpeurynter by the method of Dr. Stowe. 5. Let him learn how to care for breech cases.

DR. HENRY D. FRY, Washington: I am glad that Dr. Pfannenstiel does not recommend a subperitoneal or extraperitoneal operation for Cesarean section and that he prefers the transperitoneal. The operation he suggests, however, does not appeal to me because in the cases that are not infected there is no objection to going right through the peritoneum and operating in the usual way. In these cases I have always noticed that the incision ought to be as high in the uterus as possible. One begins the incision in the upper part, and as one goes to the lower part of the corpus one gets into larger vessels and has more hemorrhages. This is a distinct objection to his operation. I want to get as far from the cervical tissue as possible and open the uterus high up. He asserts that there is less danger of hernia. I think that there is scarcely any danger of hernia if the wound is sewed properly.

I do not think that abdominal Cesarean section in cases of eclampsia is justifiable. In a paper which I shall read on prompt delivery in eclampsia I shall report twelve cases of vaginal section for eclampsia with eleven recoveries and one death. In the one death the patient was almost moribund when the operation was done. I think it is an ideal operation and does away entirely with abdominal Cesarean section for eclampsia.

I do not believe that abdominal Cesarean section is indicated in placenta prævia, and I think that the field for its employment is very small. In a primipara with a small vagina, small cervix not effaced and a central implantation, an abdominal Cesarean section can be done. I have reported thirty-two cases of placenta prævia in which I delivered the child by the natural passages without maternal death. If we can deliver a woman with this condition so successfully by the natural passages, I do not think that we ought to subject her to Cesarean section, and I believe that we should do it only in a few cases, the indications in a case being that the patient is a primipara with a central implantation and a cervix not effaced.

I do not agree with Dr. McPherson that symphysiotomy is universally discarded, and believe that if, in certain cases, he had used it he would not have had such a high mortality from Cesarean section. We ought to select the cases and eliminate such bad ones as he had. Evidently good judgment was not employed and patients operated on that should not have been subjected to operation. If my results were not better than his, I might change my technic and adopt his. He says that one must not take the uterus out of the abdominal cavity on account of the danger of shock. That is all theoretical. The uterus can be taken out of the abdominal cavity without danger of shock. I have had nineteen Cesarean sections in which the uterus was taken out of the abdominal cavity, and not picked cases, but cases that were brought into the hospital, some in labor for thirty-six hours, and in those nineteen cases there were eighteen recoveries and one death. The patient that died died because of acute dilatation of the stomach.

DR. J. H. CARSTENS, Detroit: It seems to me that this operation described by Professor Pfannenstiel is not for the general practitioner. It is more difficult than Cesarean section. I think it an ideal operation in selected cases in hospitals where there are the facilities, but to perform this operation somewhere in a cottage, down here on the Illinois prairies, opening up all the loose cellular tissue and all those little channels where there is a chance for septic absorption, I think is a pretty serious thing. We are not so afraid of the peritoneum as we used to be. The operation of vaginal Cesarean section is the one operation for eclampsia. In eclampsia it is necessary to operate quickly. The child in from three to five minutes can be delivered. Any general practitioner ought to be able to do that operation and he should familiarize himself with the methods of operating, because he is the one who has the cases of eclampsia. He can split the anterior lip and deliver the woman in a few minutes and save many women's lives.

So far as Cesarean section itself is concerned, I think that the lines ought to be drawn more broadly. Patients can not always be saved. In order to save the patient it is necessary to make a diagnosis of the condition beforehand, to get the measurement of the pelvis and to be prepared to do Cesarean section in time, and not try all modes of delivery and then when the poor woman is septic and used up finally decide to do a Cesarean section. That is not fair to the man who does the Cesarean section. If one man can not do it, he can get help. The hospital facilities are so great in this country and in Europe that any man can get assistance in a very short time. But the important point is to be prepared to do Cesarean section in time.

DR. WILLIAM B. REID, Rome, N. Y.: It is possible for a country doctor and general practitioner to do a Cesarean section, either abdominal or vaginal, and to do it successfully, not only for the mother, but for the child. During the past twenty months I have had opportunity of doing eight Cesarean sections, and I report these cases without mortality. I differ from the previous speakers regarding the technic. I do not believe that these little points make so much difference. I believe that the vital point is to be sure of the diagnosis. I do not know of any one having spoken of or written on the use of the *x*-ray previous to confinement for the purpose of measuring the pelvic outlet. The most important point of all, having decided the necessity of doing the operation, is to do it expeditiously; do not kill the patient from shock. It is not whether the uterus is raised or left in. It is how much time is spent and how much shock is given the patient. The average time consumed in these operations that I referred to was twenty-six and a half minutes. I am ashamed to say that in the last one I took thirty-six minutes.

DR. LESTER E. FRANKENTHAL, Chicago: After a careful perusal of the literature that comes to us from abroad and in our own country, I came to the conclusion that I would never subject a patient of mine to the extraperitoneal cervical Cesarean section. Shortly after coming to this conclusion I was asked to see, in consultation, a case of eclampsia. The patient was brought to the hospital and died about thirty minutes after I first saw her. I was at that time preparing for another operation in the operating room, and being notified of her death, I hastened to her room in order to do, if possible, a Cesarean section on the dead in order to save the child. Some time elapsed before I could get the necessary instruments—a knife or a scalpel was all I asked for. While waiting for the instruments I auscultated but could not hear the fetal heart sounds. I then decided to do the Sellheim operation in order to get personal experience in this operation on a pregnant though dead woman. I found the difficulties that have been described in the literature of separating the bladder from the peritoneum and found that it was impossible in this instance to avoid tearing the peritoneum at the inser-

tion of the median vesical ligament, so that had this been a septic case the peritoneal cavity would have been opened and sepsis could probably not have been avoided. The position I take is that pubiotomy and Cesarean section are positively contraindicated in all septic cases; and, notwithstanding the remarks that have been made here this afternoon, I should not hesitate, if delivery were impossible by the natural passages, to do a craniotomy on the living child, because I reason that the life of the mother is of greater value than the life of the unborn or born child, especially since in the event of the death of the mother the chances are greatly in favor of the child's not growing to maturity. Besides, if a craniotomy is performed on the child and the mother recovers without any untoward results, as she ought to in the vast majority of instances, another opportunity is given her for a subsequent pregnancy, and a premature delivery, a Cesarean section or a pubiotomy can be done in a subsequent pregnancy at the proper time, before the woman has become infected, and she can then personally rear her child, since recovery is practically assured. I believe that having had this experience on the dead—it was a rare opportunity—I shall never subject an infected patient to the extraperitoneal Cesarean section, and in other cases (non-infected cases) when Cesarean section is indicated I should prefer to do either the required Cesarean section or the intraperitoneal Cesarean section as most of us have done many times.

DR. I. S. STONE, Washington: I oppose Dr. Pfannenstiel's suggestion for this reason: If Cesarean section is wrong in an infected woman because she is infected, the danger is not necessarily because the peritoneum itself will be involved or infected. We all know that the peritoneum is about the best friend that the abdominal surgeon has. I was much surprised to hear a man say that a majority of his fatal cases were a result of peritonitis. Such is not my experience. A majority of deaths in my cases are from sepsis, and I would rather trust the peritoneum to care for an infection transmitted by operation than by the method suggested by Professor Pfannenstiel, or any of those operations which expose the connective tissue around the bladder. The possibility of a patient dying from sepsis with lack of drainage has been mentioned. If infectious matter can be forced from the uterus into the peritoneum, it certainly can be forced into the connective tissue, and that ought forever to contraindicate that operation.

Twice since the paper of Dr. McPherson has been read I have heard suggestions in favor of a return to mutilating operations on the child. I must have been living in a land of dreams. I have been living in Washington, where we do Cesarean section without mortality, and when I hear the New York statistics which announce a mortality of 16 per cent., I do not wonder that these speakers mention the mutilating operation of embryotomy.

DR. ROSS MCPHERSON, New York: I regret that I did not make myself clear on the question of mortality. I made a statement of a total mortality of 16 per cent., but I said in addition that the mortality in cases in which sepsis occurred was only 4 per cent. If I had wished to select the cases I could have shown over a hundred with no deaths at all, but it was my desire to be perfectly honest, and to give the statistics exactly as they occurred, even at the risk of having them misunderstood. I do not consider that a death from general carcinoma, or from paralysis following Pott's disease, should be laid at the door of a Cesarean section, done for the sole purpose of saving the life of the child. Dr. Fry spoke as if he thought that I had done all of these cases myself. Such is not the fact. My own record is eleven cases, with eleven living mothers, eleven living children, and eleven primary unions resulting.

I did not state that Cesarean section by the abdominal route was indicated in every case of eclampsia, but in certain cases in which the pelvis is even a trifle contracted, Cesarean section by the vaginal route does not offer any more ease of extraction than without it, as by the vaginal route, the bony pelvic obstruction is not in any way relieved. I do not see any reason to change my views in regard to placenta prævia, and concerning symphysiotomy, I stated that I knew of no place where that operation was being done at the present time. Our experience at the Lying-in Hospital proves that patients are liable to have more shock, and to bleed more, when the uterus is removed from the abdominal cavity. In the first fifty or sixty cases reported, the uterus was so removed, since which time we have not done so, and believe that we have had better results. Concerning the use of the *x*-ray, a number of German observers report the death of the fetus after the prolonged exposure necessary to obtain a good negative of the pelvis. This is worthy of consideration.

THE PREPARATORY AND AFTER-TREATMENT OF ABDOMINAL SECTION.*

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Recent discussions on the preparatory and after-treatment of abdominal section have shown great disparity of opinion. Some advise a thorough and extended course of preparatory treatment, including medication, dieting, free purgation, etc., while others condemn everything in the nature of a delay or of a change from the patient's ordinary mode of living. After operation some advise the withholding of even water for 24 hours and solid foods for a week, and the maintenance of a recumbent position for two or three weeks, while others give solid food as soon as the effect of the anesthetic has passed off, and get the patient out of bed on the second day. Some give opiates in the majority of cases, others give none; some allow the bowels to become constipated, others begin with laxatives as soon as the patient can take them. When doctors disagree so radically, who shall decide? In order to get a perspective view of the subject, let us briefly review its history.

When we began to perform abdominal sections, antisepsis and asepsis were not understood, and our results were so unsatisfactory that such operations were seldom undertaken until a fatal termination without interference was not only assured but imminent. Hence the mortality was excessive, and those who survived often required careful and prolonged after-treatment to keep them alive and cure them of the effects of the operation. Peritonitis, ileus, abscess formation, secondary hemorrhage, imperfect suturing, suppuration about ligatures, infection and separation of sutured surfaces, etc., were so common that the patients were kept in bed for four weeks or longer and were not allowed to be turned on the side for one or two weeks. A routine practice of allowing them to get up during the first week would certainly have been unwise under such conditions.

In order to enable them to survive, the surgeons began to develop a complicated system of preparatory treatment, which became still more complicated when the principles of antisepsis began to be applied systematically. Thus an abdominal section with its preparations, its complications and medications, to say nothing of the operation itself, was usually a terrible ordeal, of two or three months duration, to the patient and sometimes to the surgeon. But as the operative and antiseptic details developed, the operations were simplified and the postoperative complications began to diminish and now have almost disappeared. The long courses of preparatory treatment are now unnecessary, and much

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

of the old detail is recognized to be not only burdensome, but detrimental. For want of complications there is not much to be done in the way of after-treatment, although some persist in doing things. Thus the tendency all around has been toward simplicity.

There is one thing, however, which does not seem to have been sufficiently considered in our discussions, viz, the individual case, or, to put it more concretely, the patient. All cases and all patients are not alike. Every surgeon gives his method but not his case nor his kind of cases. One surgeon has a preponderance of appendix and gall bladder operations, another of intestinal cases, and another of operations on the pelvic organs.

In the case of an exploratory incision through a small incision in the posterior vaginal fornix or over the pubes on a healthy person and without doing more than introduce one or two fingers, it would sound sententious to use the words preparatory and after-treatment. The patient would only require an antiseptic toilet, i. e., to be made clean beforehand, and to have the dressings and sutures removed afterward. But if an emaciated, sallow-faced woman comes to us from a distant town with a large uterine tumor from which she has been bleeding profusely twelve or fifteen days every month for five or ten years, we are not justified in putting her into the hospital and operating on her the same afternoon or the next morning, either with or without the administration of a mild laxative or enema. We would probably take time to make a diagnosis or an attempt at one. We might not consider the time lost in making a urinalysis. If she were bleeding at the time, we might consider it advisable to put her to bed for a day or two and try and check it; or if she were at the end of a profuse menstrual period we might consider a few days of judicious feeding and tonic treatment desirable. We might consider it advisable to make a blood count, and if we found only 40 per cent. of hemoglobin and 2,000,000 red cells, we might deem a few weeks of forced feeding in a rest cure or sanitarium a justifiable preparatory treatment.

After an operation which had necessitated an incision from the pubes to an inch or two above the umbilicus, the separation of adherent adnexa and intestines, and the removal of a vermiform appendix, we might decide to allow her to stay in bed more than one day after the operation. Or if we operate on a case of late postpuerperal pyosalpinx, in which the temperature has remained high, and find the mesosalpinx and broad ligaments infiltrated with pus foci, a case in which we can only save the patient's life by removing the pus tube and draining the pelvis, we may find it necessary to keep the patient in bed for a week or two or three afterward. If there is much postoperative meteorism or gastric regurgitation we may even have to make an early attempt to move the bowels; we may have to give strychnia, liquid diet and other things for several days.

I need not tell you that the first class of cases and the last two should not be treated alike. Yet nearly every one who writes or talks on the subject gives his method as if applicable to all or to a vast majority of cases, instead of saying that his method is adapted to certain cases, and should be modified in the vast majority of cases, and reversed in some. The fact is that time should be taken to inform oneself of the condition of the patient and to correct such pathologic deviations as need correcting, whether it takes a day or a month. Except in emergency cases, a stranger should not be operated on within twelve or eighteen hours after first seen, although that much time might be sufficient for one who had been under observation or treatment for a considerable time.

I will illustrate the application of different methods employed in the after-treatment by comparing three of them, viz., (1) the use of saline cathartics and laxative enemas; (2) the use of opiates, and (3) the avoidance of all medical interference. In the first case cited of an exploratory incision, the non-medical treatment would be ideal; in the second case, that of a uterine fibroid in an anemic patient, an opiate might be desirable; in the third case of pyosalpinx one might find opiates harmful and laxatives desirable or necessary. However, in the first case one might give an opiate and make the patient feel better, or, on the other hand, one might give a laxative enema or a saline cathartic and relieve the discomfort. In the second case, there might be intestinal fulness and distress that would promptly be relieved by the laxative treatment. In the third case, opiates might be used to relieve the distress if there were no signs of over-distention or paralysis of the intestines. Thus we see that different kinds of cases are adapted to different kinds of treatment, and also that the same result may even be obtained in the same case by opposite methods of treatment. With regard to food, one patient recovers rapidly from the anesthetic and has an appetite and normal digestion almost as soon, while another recovers slowly from the anesthetic and has a coated tongue, perhaps a dilated stomach or distended intestines and should be kept on a liquid diet for a few days.

Hence I would say that to recommend a certain kind of treatment either before or after abdominal section is misleading. Each case should be treated differently from the others, for definite deviations from the normal or for the purpose of producing some slight deviation from the normal that will facilitate the surgical work, such, for instance, as reducing the normal intestinal fulness before operations for intestinal resection or anastomosis. On the one hand, we simplify our technic as much as possible, on the other, we individualize the case and do whatever the peculiar condition may indicate. We should stop talking about doing much or doing little, and talk about doing the right thing, the whole right thing, and nothing but the right thing.

In conclusion, I wish to say that the object of these remarks is not to open up a discussion about what is the best treatment, but to depreciate the prevalent tendency to recommend or to condemn methods of treatment indiscriminately.

DISCUSSION.

DR. DANIEL H. CRAIG, Boston: I think that there should be no routine treatment, and in regard to nourishment following the operation the patient's own condition and own desires in the vast majority of cases are to be taken as a guide. As long as you keep up the maximum of nourishment necessary to the patient's strength, you are doing all that is necessary. On the other hand, if another patient recovers from her anesthetic and the immediate effects of the operation and desires nourishment I think you are doing equal harm if you withhold nourishment, other things being equal. I have followed exactly the same rule with regard to the recumbent position. If one patient feels a disinclination to get up within the first few days after operation, I practically never urge on her the necessity of hastening this in the least. On the other hand, if the patient desires to sit up in bed, feels that the recumbent position is irksome—I am speaking of cases in which the results fulfil expectations—it doesn't make a bit

of difference to me whether the patient feels so on the second day or the tenth. I think that one should be guided by the feeling of the patient and one's own knowledge of the patient's physical condition.

DR. RUFUS B. HALL, Cincinnati: The paper is so conservative in its statements that one feels reluctant to discuss it, but I am going to take up one or two points; for instance, the patient who came in from the country with a large tumor in the abdomen bleeding ten to fifteen days in each month. Before he would operate, Dr. Byford said, he might keep the patient in the hospital a day or two until he improved her general condition. My feeling would be that he ought to keep her under observation for a little while, give her preparatory treatment and build up her general health. He should let her have ten or twelve days following her menstrual period to recuperate and then select the best time just before she would bleed the next time to do this operation. He owes that to his patient, the profession and to himself—to put her in the best possible condition to bear the operation she is to have.

In the other case he said he might keep the patient in bed a day or two after the operation. He should do it. He should keep her in bed longer than a day or two. The patient ought not to be permitted to get up in a day or two, in my judgment, even if she wants to.

OBSTETRIC, SEPTIC AND ANESTHETIC TOXEMIAS.*

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Postoperative vomiting of a regurgitant type, first mucous, then bilious, finally brown, grumous and bloody, has been for many years a well known and much dreaded sequel of surgery, and has struck terror to the hearts of many surgeons after the performance of apparently simple and successful operations. The significance was so evident and a fatal result was so often inevitable as to dishearten the most buoyant optimist. Accompanied by slight icterus, relative or absolute suppression of urine, intestinal and gastric distention, tympanites and aperistalsis, it constitutes a pathologic picture long known and dreaded, yet little understood.

ETIOLOGY.

It is only within the last year or two that the true causes which have produced this symptom complex have been generally suspected and a solution of the problem seriously suggested. Even now when we seem to have struck the right lead, little has been done other than to suggest in an indefinite sort of a way that the conditions are due to a toxemia or toxemias to which certain things are contributory as etiologic factors.

This syndrome has been recognized for a number of years in connection with pregnancy as acute yellow atrophy of the liver, and, furthermore, its toxic character has been appreciated; but curiously enough the occurrence of most of the same symptoms, more or less constantly grouped, after surgical operations has failed to suggest to our minds a like toxemia or failure of elimination due to surgical sepsis, chloroform poisoning, or a sapremia resulting from decomposing placental tissue or retained blood clot after abortion or ruptured ectopic pregnancy. I have had the misfortune to see several of these toxemias in cases of ectopic pregnancy and incomplete abortions, and have learned to regard sapremia as a common antecedent of the serious symptoms noted.

Overlooking the significance of the slight icterus, when it has occurrred, and disregarding the urinary suppression, we long labored under the delusion that most of the surgical patients presenting this group of symptoms were primarily victims of what we have been pleased to term intestinal paresis, and we have treated them as such, basing the diagnosis, in the main, on the obstinate and persistent vomiting and aperistalsis or reversed peristalsis; ignoring the underlying causes of the toxemia, such as sepsis, late chloroform poisoning, sapremia, etc.—failing utterly to appreciate the significance of acetone, diacetic acid and even albumin and casts in the urine, and knowing little or nothing of the bearing of the ammonia coefficient.

Certain well-known toxemias of pregnancy present a pathologic picture which resembles very closely these postoperative toxemias. The clinical history and symptoms resemble them closely in most of the important details, particularly in the character of the pernicious vomiting of pregnancy of toxemic origin, as pointed out by Whitridge Williams.

CLINICAL COURSE.

The course of the disease is ordinarily somewhat less acute and virulent as an accompaniment of pregnancy, and its symptoms are, perhaps, more varied. However, the vomiting presents the same general characteristics, and the appearance of the liver at autopsy is much the same as in the toxemias of sepsis, sapremia and late chloroform poisoning.

The characteristic eye symptoms of these toxemias (neuroretinitis and retinal hemorrhages) are more often observed in the toxemias of pregnancy because of the slower and more insidious course of the disease. Yet it can scarcely be doubted that they exist many times without being recognized in the more rapidly fatal postoperative toxemias caused by sepsis or chloroform, and one can scarcely doubt that they would be found much oftener in such cases if they were more often sought.

Grouped and classified simply from the standpoints of symptomatology, urinalysis and autopsy findings, liver diseases of pregnancy, sepsis, sapremia and late chloroform poisoning have many points in common which serve to place them in close relation with each other. Only detailed study of their different phases can determine a further classification and differentiation between them.

In the earlier stages of the disease, these cases are apt to present in common an acidosis of the urine, without albuminuria. It is also probable that the "high ammonia coefficient, indicating that a much greater proportion of the total nitrogen is excreted in the form of ammonia than usual" (Whitridge Williams), will be found to be common to all of these toxic states, as has been demonstrated by Williams in the toxic vomiting of pregnancy. Whether the overloading and overwhelming of the liver, or its inadequacy as a toxin filter is responsible for the toxemia, or the toxemia causes the liver and kidney lesions and produces the inadequacy and consequent failure of function, is as yet unsettled; but medical science is making progress in the solution of the problem, and the indications point to a revision of our former views and teaching in regard to this moot point.

While some of the patients who present this symptom complex of toxemia as a postoperative or obstetric complication may be shown to have had an impaired liver

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and kidneys which have acted imperfectly as toxin filters and eliminators, many others are apparently healthy and sound until overwhelmed by the profound intoxication, the liver and kidneys giving way and breaking down under the toxic load carried to them by the blood stream. Woods Hutchinson[1] says: "In short, in the pregnant woman, an excess of excretory materials is poured into the blood, and it apparently takes, as it were, but a straw to throw the already overloaded liver off its balance, and set up degenerative changes in it, which result in the rapid accumulation of poisonous products in the blood. It would appear that, here again, as under other conditions, the liver is the principal protector of the body tissues against toxins from whatever source; and that the question of the degree of systemic invasion is largely a question of the degree to which it can rise to the emergency."

I think most of us have been struck with the curious similarity of the final syndrome in a large percentage of our fatal cases. No matter from what source the poison comes, whether through a pure infection, or an acute poisoning, or a chronic autotoxemia, a very large percentage of our patients die after the same fashion. There is the familiar group of headache, drowsiness, loss of vision, Cheyne-Stokes respiration, increase of expiration over inspiration, coma, convulsions; and death closes the scene. Whether the cause of death is pneumonia, yellow fever, phosphorus poisoning, surgical sepsis, puerperal eclampsia, diabetes, or nephritis, the dying picture is so similar that one can not help being strongly inclined to the belief that death, in all these cases is due, not so much to the original toxin, which destroyed or damaged the particular organ involved, as to the general accumulation in the tissues of the poisonous products of their own metabolism. In fact, to coin an expression, this symptom group stands for "liver failure."

The exact *modus operandi* of the intoxication is as yet undetermined in both the postoperative and the obstetric varieties of the disease. Little that is logical or scientific is known about its treatment except to get rid of the causative factor (pregnancy) in the obstetric variety, to promote the elimination of the poisons through the skin and other channels in all phases of the process, and to add as little as possible to the burden of the overwhelmed organs through the administration of improper food and drugs which are poisonous in this condition.

The one practical point which seems to present itself clearly, and the one to which I desire to call especial attention is the apparent necessity for avoiding the administration of chloroform in any of these cases, whether they be obstetric or surgical; for so much we do know, that chloroform may produce the very condition we are fighting and can only add to the burden of the already impaired organs of elimination.

CHOICE OF ANESTHETIC.

As to a choice between chloroform and ether where some anesthetic must be given, I say without hesitation that I should give the preference to ether in spite of what is said by Hare and others about its being contraindicated and chloroform preferable in such conditions of toxemia with liver and kidney complications. Wherever possible local anesthesia, spinal anesthesia, somnoform or nitrous oxid gas should be substituted for both ether and chloroform. Morphin and codein should also be avoided whenever possible.

OPHTHALMOSCOPIC EXAMINATION.

The diagnostic importance of an ophthalmoscopic examination can not be too strongly emphasized, for in many of the cases it is possible for an expert to make an absolute diagnosis from the appearance of the eye grounds alone, as was done independently and without help from me by Dr. E. W. Stevens in the case of one of my patients who suffered from such a toxemia of pregnancy and who had no albumin in her urine. Likewise, the chemist who made the urinalysis, Dr. E. C. Hill, reported independently the same diagnostic opinion—all of which goes to show the enormous importance of skilled and intelligent collaboration in such cases.

THE URINE.

The urine is primarily and before all else the index to the serious pathologic process and must be regarded as the key to an early differential diagnosis. While its quantity and specific gravity, the presence of albumin, casts, blood or pus are significant, these do not point to the true state of the case as does the existence of a high degree of urinary acidosis with acetone, diacetic and oxybutyric acid, etc., and particularly a high ammonia coefficient, as is insisted on by Whitridge Williams and others.

REPORTS OF CASES.

Of the patients I have seen who have developed these profound symptoms of toxemia, five are of exceptional interest, as they are examples of different pathologic states in which the toxic syndrome was a sequel.

CASE 1.—A married woman, 28 years old, known to be pregnant, had been bleeding from the vagina for a number of days and was thought to be aborting. She was very nervous and had vomited freely when I first saw her. She was sent to the hospital, chloroform was administered, and on examination the uterus was found empty and a mass was felt in the left pelvis. Vaginal incision through Douglas' pouch demonstrated blood and clots in the peritoneal cavity. A rapidly executed abdominal section made it possible to empty the abdomen of the blood clots and tie off and remove the left tube, in which a six weeks' ectopic gestation was found. She was put to bed in good surgical condition, but soon developed restlessness, headache and a shrieking delirium, so that it was necessary to use mechanical restraint. She vomited mucus, bile and grumous blood; was jaundiced and secreted little or no urine, and died in coma on the third day.

The important paper of Bevan and Favill,[2] on the effects of late chloroform poisoning, appeared soon after her death. On reading this paper it became apparent to me that my case was one of those toxemias in which we now know that chloroform is a contributory agent to a fatal termination, for this is the view I prefer to take of these cases rather than to attribute the symptoms solely and entirely to the poisonous effects of the chloroform. I am convinced that the free blood and clots in the abdominal cavity and the antecedent pregnancy were factors in producing the toxemia.

Soon after this I saw in consultation a woman with symptoms of precisely the same kind. She had been delivered at term by an exceptionally capable practitioner, a small amount of chloroform having been given. After eleven days she died with the symptoms of acute yellow atrophy of the liver. The delirium, jaundice, vomiting,

1. The Liver as a Toxin Filter, Practitioner, Lond., November, 1906, p. 583.

2. THE JOURNAL A. M. A., 1905, xlv, 691.

urinary suppression, blindness and coma were unmistakable, and at the autopsy the appearance of the liver and kidneys was characteristic.

CASE 2.—This patient, aged about 25 years, was sapremic from self-induced abortion, the uterus not having been emptied. She was distended and the tubes and pelvic peritoneum were infected. Operation for emptying the uterus and dealing with the pelvic infection by laparotomy was begun under ether; but as this was not well taken, chloroform was substituted by the anesthetist. The operation was completed quickly and satisfactorily, but the patient soon developed restlessness, vomiting, urinary suppression and jaundice. She became wildly delirious, screaming, fighting and biting, so that she had to be tied down in bed. Coma and death followed two days later. At autopsy the liver was found shrunken, yellow and softened in spots.

CASE 3.—A married woman living apart from her husband was seen in consultation. She was past 40 years of age and had several children, though no pregnancies had occurred for more than ten years. She was bleeding from the vagina and having intermittent abdominal and pelvic pains like uterine contractions. She admitted missing three menstrual periods, but strenuously denied the possibility of pregnancy. She confessed to having had great pain during the preceding night and having expelled a "fleshy tumor," which she had failed to save for the inspection of the doctor. At the time of my visit she was icteric and vomiting bile. She had severe headache and was anxious and restless.

On vaginal examination, the uterus was found enlarged and softened, and the os dilated so that a finger could easily be introduced into the uterine cavity. She had the nipple signs of pregnancy.

My diagnosis was incomplete abortion, complicated with toxemia and liver and kidney involvement

She was sent to the hospital, and so far as possible without an anesthetic the uterus was explored and emptied with the finger and placenta forceps. My irrigation and drainage tubes were introduced, and dilute alcohol irrigations of the uterine cavity were made through the tubes every two hours. She did not become delirious or unconscious, but her face became puffy and her legs edematous, and for eleven days she secreted only a dram or less of urine each 24 hours. This urine was high colored, boiled solid, and was loaded with blood, casts and renal epithelium. It also gave a pronounced reaction for acetone and diacetic acid. The patient died twelve days after I first saw her in coma.

At autopsy, the uterus was found enlarged, softened and partly filled with broken-down and decomposing placental débris. The liver was small, markedly yellow and fatty, with many small, softened and necrotic areas. The kidneys presented the characteristic appearance of an acute parenchymatous nephritis.

In this instance the toxic character of the disease was recognized early. Notwithstanding the indications for emptying the uterus it was deemed wiser to accomplish this end only so far as might be possible without the administration of an anesthetic, relying on the intrauterine irrigations of alcohol to arrest the residual placental decomposition and uterine infection. This brings up the perennial question of the use of the uterine curette in such a case; but that is a vexed problem we have no time to consider in this connection, though most of us have very definite views on the subject.

In this case, at least, the toxemia was not complicated and intensified by the administration of chloroform or the elimination interfered with by morphin, nor was the existing overload in the blood stream increased through the administration of nitrogenous or other improper food.

CASE 4.—A young woman who came to Colorado for pulmonary tuberculosis was found to have a tuberculous right kidney. The left kidney was sound and doing the physiologic work of both. The right kidney was removed under surgical anesthesia, ether being selected as the anesthetic of choice; but the anesthetist, who makes a specialty of this branch, changed to chloroform during the operation without my knowledge or consent.

The patient vomited inordinately from the time of her recovery from the anesthetic, the vomitus becoming green, then brown, and was regurgitant in type. Slight icterus soon developed. The left kidney secreted amply for the first forty-eight hours, but the quantity gradually diminished until suppression was complete after five days. From the second day acetone and diacetic acid were found in it, and later albumin and casts in abundance. She died six days after the operation. The autopsy revealed the characteristic small yellow liver and an acute parenchymatous nephritis of the left kidney, but no tuberculous disease, though the right kidney was found completely disorganized and riddled with tuberculous abscesses when removed at the operation. The wound of operation was dry and apparently uninfected.

CASE 5.—Woman, aged 38 years, pregnant five months. She had lived well for some years and taken her share of a bottle of wine for lunch and dinner. Her life was sedentary. She had vomited almost daily for three months; but the vomiting could not be said to be pernicious or inordinate. When I saw her she was dull and complaining of an intense and unbearable headache with some dimness of vision. The urine was scanty and high colored, *but contained no albumin.* The other constituents of the urine were most significant, however, and clearly pointed to toxemia with hepatic involvement.

Report of Dr. E. C. Hill on first specimen of urine:

Quantity (24 hours), 31 ounces; color, yellow; reaction, slightly acid; sp. gr., 1015; urea, 1.7 per cent.; uric acid, 92 mgm. per 100 c.c.; phosphates, 7¾ per cent. by volume; chlorids, 3 per cent.; inorganic sulphates, 0.7 per cent.; indican, slight excess; bile salts, doubled; ammonia, 2.52 gm. treble normal maximum; albumin, absent; albumose, absent; dextrose, absent; acetone, very marked reaction; diacetic acid, marked reaction; hemoglobin, absent; bile pigment, absent; centrifugal sediment, slight, consisting of mucus, vesical and vaginal epithelium and vibriones.

Rigid diet, catharties, diuretics and diaphoretics brought about great improvement in her condition, and she was soon well enough to take a carriage and visit the office of Dr. E. W. Stevens for an examination of her eyes. I had told him nothing about her illness, but he wrote me as follows in regard to her: "I have just finished the examination of the eyes of Mrs. X. She gave a history of pain in the eyes and head of five weeks duration. The pain in the head located near the right occipital parieto-temporal region had been made worse by a blow in this region. The pain was constant.

"My examination showed a left hyperphoria of 1½ degrees. The refraction under homatropin was R. E. + S. ⊃ + 0.75 cyl.; axis 120°. L.E. + 1.50 S. With this correction the vision was normal.

"The ophthalmoscopic examination showed well-marked neuroretinitis in each eye, one small hemorrhage was observed in the right eye, near the nasal margin of the optic nerve. This patient, then, presents three ocular conditions for consideration, viz.: (1) A left hyperphoria of 1½ degrees. (2) A high refraction error. (3) Neuroretinitis. I have ordered glasses correcting the hyperphoria and the error of refraction. The neuoretinitis is without doubt due to toxemia of pregnancy."

Great improvement followed the persistent maintenance of the treatment and diet, and she went along to the twenty-eighth week of pregnancy with comfort. Then, after some dietary indiscretions and relaxation of the eliminators, she again developed intense headache and scanty urine, with much puffiness of the face and ankles, the pulse dropping to 38. The urine was found loaded with epithelium, casts, and blood, and contained 50 per cent. of albumin by volume. Later it boiled solid. A rigid diet amounting almost to a prolonged fast, and forced elimination brought about some improvement in the conditions and she was carried to the thirtieth week of gestation, when a large catheter was put into the uterus, and the vagina was packed with gauze to induce labor. The

fetal heart and fetal movement could still be found. After three days, labor having begun, the catheter and gauze were removed, and the cervix was found partially dilated and quite dilatable. The cord became prolapsed. As it was still pulsating and could not be replaced the forceps were applied and a small, under-developed, still-born child was extracted, and the placenta was expressed. No anesthetic was given.

She made a slow but steady and satisfactory recovery. One week after delivery the urine had cleared up to a remarkable degree, the albumin being reduced to a trace and the renal débris markedly diminished.

She had severe headaches for some time and her skin was sallow; but her progress toward restored health was uninterrupted. Her vision is improving and it is hoped that little permanent impairment of her sight will result.

William Hunter[3] says of chloroform poisoning: "According to Guthrie the unknown cause of this idiosyncrasy is a pre-existent and morbidly fatty condition of the liver which reduces the liver to the verge of inadequacy prior to the administration of the anesthetic."

We can scarcely escape the conviction that this is true in many of the surgical and obstetric patients we see with such toxemias as are here considered.

Knowing the late poisonous effects of chloroform as we now do, it is certainly incumbent on us as surgeons and obstetricians to do all in our power to make an early diagnosis of these states through the symptoms, the urine and the eyes; to treat them as intelligently and vigorously as our present knowledge of the subject warrants, and above all else to withold drugs which may accentuate the toxemia or retard the elimination of the toxins.

The high ammonia coefficient insisted on by Whitridge Williams as a diagnostic feature in the toxemias of pregnancy must be conceded to be important. He has done much to establish this point in its bearing on the pernicious vomiting of pregnancy. His conclusions are in accord with what we have long known to be true in other toxemias which present the symptom complex of the inadequacy of the liver as a toxin filter.

Another highly important point is made by William Hunter.[3] He concludes: "The vomiting which occurs after administration of anesthetics is not of nervous origin; but it is, I consider, essentially toxemic, due to the profound depression of liver function with consequent diminution in its antitoxic function during the period of the administration. This depression will be the greater if a liver already weakened by disease or poor nutrition be further unduly weakened by food having been withheld for many hours before the administration of an anesthetic, may thus in individual cases be carried too far, and it is, in my opinion, largely responsible for the effects of delayed chloroform poisoning in exceptional cases. Such effects could in all probability be completely prevented if, instead of withholding food, particular care was taken that the patient had always a very nutritious and easily digestible meal, well sweetened, two or three hours before operation."

Surgeons, gynecologists and obstetricians can not hope to solve the intricate questions involved in pathologic problems such as are presented by cases like these. The internist, the physiologist, the biological chemist and laboratory worker must tell us how and why these things occur. We can, however, give the results of our clinical experience to aid them and we can aid each other by relating our experiences, suggesting expedients and making known our practical conclusions.

3. Delayed Chloroform Poisoning: Its Nature and Prevention, Lancet, Lond., April 4, 1908, p. 993.

CONCLUSIONS.

So far as one may reach conclusions regarding an unsolved problem, my reading, observation and clinical experience lead me to believe:

1. That toxemias of pregnancy, sepsis, sapremia, late chloroform poisoning, etc., have many common characteristics and from the standpoint of the clinician they may be grouped for study, prevention and treatment.

2. Chloroform may cause such toxemias and liver lesion *de novo*.

3. Chloroform aggravates existing toxemias of the hepatic type.

4. Pregnancy, retained blood and clots of concealed hemorrhage, the sapremia from decomposing placental and fetal débris, sepsis, and the autointoxication of overfeeding and drinking and of coprostasis predispose patients to such liver lesions.

5. Urinary insufficiency with acidosis and a high ammonia coefficient, retinal hemorrhages and neuroretinitis, regurgitant vomiting of the mucous, bilious, grumous type, with or without slight jaundice, and with or without albuminuria, constitute the syndrome characteristic of such toxemias.

6. Albuminuria, when it occurs, may be, indeed often is, late in developing (as in Case 5) and should be regarded as secondary rather than primary, and as a result rather than a cause of the condition.

7. In such toxemias of pregnancy with or without pernicious vomiting the uterus should be emptied at once, but without chloroform, and, if possible, without other anesthesia.

8. Fasting and forced elimination by the skin, kidneys and bowels offer the best prospects for cure after, as well as before, the removal of the cause.

DISCUSSION.

DR. BERNARD COHEN, Buffalo: How would Dr. Wetherill find the high ammonia coefficient in the case of a woman with eclampsia and how would he examine an eclamptic woman's eyes to determine whether she has choked disc? Of course the intestinal contents form the leading cause of all forms of toxemia. The chloroform produces it in a way; but how would the condition be accounted for in a woman who has not had chloroform? The effects of the eclamptic poison on the liver have been beautifully demonstrated by Dr. Ewing of New York. He has a number of specimens showing how the liver is broken down in patients dying from eclampsia. The foci can be seen only with the microscope, but the whole liver is studded with the necrotic spots.

DR. HENRY D. FRY, Washington: Tarnier points out that in all cases of pregnancy there is hepatic insufficiency and that insufficiency is increased by any toxemic condition. We often see the function of the liver still more interfered with. The kidney affection, as Dr. Wetherill has said, is secondary. The first indication of toxemia is sometimes renal insufficiency. Dr. Williams four years ago stated that we should accept the percentage of ammonia coefficient as an indication of when to empty the uterus in hyperemesis gravidarum. The quantity of the ammonia coefficient is not so important in eclampsia. Dr. Williams stated that with the ammonia coefficient increased to 10 per cent. dangerous ground had been reached and that the uterus should be emptied. I thought that a very interesting statement and I tried to follow it. In a case of hyperemesis gravidarum very soon afterward, however, I had to empty the uterus before the ammonia coefficient reached 6 per cent. If I had waited for 10 per cent. the woman would have died. On the other hand, the ammonia coefficient may go to 35 per cent. or 40 per cent. and the woman get well without

evacuation of the uterus. It was a great disappointment to me to find that this sign, which I hoped would be a good indication, had failed. The only point on which I disagreed with Dr. Wetherill is that I do not attach to the percentage of the ammonia coefficient the same degree of significance that he has attached to it in his paper.

DR. H. G. WETHERILL, Denver: I have no final solution of the problem to offer. It is in a process of evolution and its solution must depend on the members of the profession and their laboratory co-workers. I did not intend to convey the impression that I regarded the percentage of the ammonia coefficient as a sole and final factor which should decide whether or not the uterus should be emptied. Like Dr. Fry, I do not accept the statement of Dr. Williams as the last word in this matter. Probably Dr. Williams himself may be inclined to modify his views later. Taken with other things, however, it has a great deal of significance. I think that the character of the toxemia is indicated much more by the state of the blood and the blood tension as shown in the eyegrounds and otherwise, and I regard the condition of the eyes and the cooperation of an expert ophthalmologist as most important in making the diagnosis and in deciding on the course of treatment to be adopted.

A SUMMER CAMP FOR THE TREATMENT OF SICK BABIES.*

WALTER GRAHAM MURPHY, M.D.
HARTFORD, CONN.

In the treatment of summer diarrhea in children, artificially fed, it is generally agreed that there are three important requisites, namely, clean milk, fresh air, and intelligent care. It is also agreed that in the prevention of diarrhea the utmost vigilance must be observed during the hot months, particularly in cities. How to provide all these conditions is one of the problems in medicine, the solution of which is imperative.

This paper has to do with the efforts of the Hartford (Conn.) Medical Society to solve this problem in its locality. During the summer of 1907 a camp was maintained in one of the city parks by a committee of the society. This camp was suggested at a meeting of the milk commission of the Hartford County Medical Association. It is easily seen that the production of certified milk is not sufficient alone to materially reduce the high mortality of diarrhea among the children of the poor. The price is prohibitive. Those who can afford to pay fifteen cents a quart for milk can conveniently remove their children to the country or seashore during the hot months. Those who, from necessity, must remain in the city, and can not procure certified or other high-grade milk, are the very poor. Some, it is true, realizing the importance of clean milk, obtain it at the sacrifice of other things, but many can not. It is to reach the latter class of people that the hospital was established. Milk stations and laboratories for distributing certified milk were carefully considered, but it was the opinion of all that the best results were to be obtained by a hospital assuming entire control of a patient, night and day, during his illness.

As a result of this opinion at a meeting of the Hartford Medical Society a committee of ten was appointed with authority to construct and maintain a summer hospital for the care and treatment of sick babies. The committee was given authority to collect money in the name of the society for the support of the hospital. Permission was obtained from the city park board to locate a tent hospital on Riverside Park, and an appeal for money was made through the daily papers.

Riverside Park, as its name implies, is a park on the bank of the Connecticut River. It is not an ideal location for a camp. The park is very largely made ground, somewhat low, and twice a year at least is under water from river freshets. On the east side it borders the river, and on its west is a railroad freight-yard. It was certainly a severe test for the efficiency of an outdoor hospital. This park was selected because of its nearness to the tenement district whose babies it was designed to treat and to whose mothers it was desired to demonstrate that cleanliness for babies, pure milk, and fresh air would accomplish results.

In the construction of the hospital four tents were used. One was a ward-tent thirty feet long and fifteen feet wide, with six-foot side walls and thirteen-foot ridge. This tent held, with some crowding, twenty-four babies. Behind the ward-tent and connected with it by a covered passage, was the diet-tent, twelve by fourteen feet. There the babies' milk was prepared and instruction given to the mothers of the sick children in the methods of handling clean milk and of making simple modifications. Each mother had these instructions before taking her baby home. Behind the diet-tent stood a tent nine by nine feet, containing the boiler which furnished the hot water, and at one side was a tent twelve by fourteen feet used as a nurses' dormitory. All the tents, except the boiler-tent, were floored. The furnishings of the ward-tent were two long tables two feet in width, which held baskets for the babies. Each basket was covered by a hood of mosquito-bar. All woodwork was painted white. In the diet-tent were a sink with hot and cold water, a refrigerator and a table for preparing food for the patients. All the tents were lighted by electricity.

The hospital was opened July 15 with accommodations for twelve patients, and two nurses in attendance. Later twelve more baskets were added and three nurses. Our nurses worked under decided disadvantages. The dormitory as arranged was not practical for sleeping-quarters during the day. A room was provided and meals furnished up-town.

The attending staff consisted of members of the society. There were six attending physicians, a bacteriologist, who kept a careful oversight of the milk supply, and a pathologist. The members of the general committee having the work in charge acted as consultants.

According to Dr. Williams' report as secretary there were treated, up to the closing of the hospital on September 15, sixty babies. The average number per day was twelve; the average length of stay ten days. During the hot periods all twenty-four beds were filled; and on one day in August there were twenty-five patients, and eight were turned away from lack of room. Most of the patients (60 per cent.) came in for summer diarrhea; 30 per cent. were suffering from marasmus or severe malnutrition; 7 per cent. had gastrointestinal indigestion without diarrhea; 10 per cent. had marked rickets; 5 per cent. had pneumonia; while meningitis, malaria, pericarditis and cretinism claimed one case each. The death rate was comparatively low, considering the severity of the cases treated, most of the deaths occurring in cases in which diarrhea was grafted on a previous malnutrition or rickets. There were twenty deaths, or 33 per cent. mortality,

* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

including all cases. Deducting from this the patients that entered the hospital moribund and died within the first twenty-four hours, the death rate was 18 per cent.

The expense of the hospital was met by public subscription. According to the report of the treasurer, Dr. Abrams, the total expense was $1,619.01. Of this amount $483.96 was for equipment, tents, plumbing and carpenter work; $274.42 for furnishings, bed-sheeting, household utensils, etc.; $208.42 for maintenance, laundry, telephone and help; $200 for food, including groceries, ice, coal and medicine; $416.20 for nurses' salaries, meals and room, and $35 sundry expenses not classified. Including total cost the average expense per day for each patient was $2.23. Deducting the cost of equipment and furnishings and not allowing for depreciation, which is an unknown quantity, the average cost per day for each patient was $1.15.

The committee feels that the society may congratulate itself on the success of the hospital, and on the interest which it aroused in the community. The well-to-do rallied most cordially to its support and gave help and money freely, and the east side showed its interest by coming to the hospital in such crowds that the tents had to be roped around to protect them.

Such, in brief outline, is the result of our first year's undertaking.

During the present summer the same general plan of work is to be continued as that of last year. There will be added another ward, thus allowing a total accommodation of forty patients. The nursing staff will consist of five trained nurses and five nursery maids. The nursery maids will be trained in the care of babies under ordinary conditions. They will be taught the rules of infant hygiene and the care and preparation of food. The committee also hopes to be able to give to the mothers more adequate demonstrations of the care of milk and bottles.

On account of the increased force of nurses and the difficulties experienced last year in finding suitable accommodations for board and rooms near the hospital, and also the expense and inconvenience of sending out the laundry, the committee has purchased a portable house, to be used as a dormitory, dining-room and kitchen for the nurses, and in which the laundry work can be done.

Our expenses must, of course, be greater than last year.

The committee does not put forward the idea of a summer camp with any claim of originality. In the important work of education and in the alleviation of the sick, this camp simply demonstrates a method which may be employed. It is modest in its construction and inexpensive to maintain. It offers the advantage over regularly established hospitals that it can be erected on any plot of ground where there is a water supply and drainage, and further, it fulfills its function as an object-lesson and means of education better than any isolated hospital can possibly do. It is in the open where those who pass must see its work and its aim.

75 Pratt Street.

DISCUSSION.

DR. J. H. MASON KNOX, Baltimore: I have been interested in work of this character for several years and am glad to see that it is becoming more general. In Baltimore we found that the terrific thunder storms which we sometimes have there made tents impracticable for sick babies. Considering the short duration of time these babies stay in the hospital, there should be trained nurses and physicians to care for the babies when they are returned to their homes. We found at Mount Wilson that unless, after the babies were returned to their homes, we could give them pure milk of exactly the quality we had at the hospital and supply the proper nursing much of our summer work at Mount Wilson was thrown away. If these children can be returned to their homes with a mother who understands better how to care for them and a trained nurse to visit them in their homes and give necessary instructions, the results from the summer camp treatment will be very much better.

DR. JOHN M. BEFFEL, Milwaukee: I want to give a little review of the work that is being planned in Milwaukee. A year ago one of the women's clubs became interested in the death rate among children under 5 years of age. The death rate was shown to be 40 per cent. of the total death rate in children under 5 years of age. We had the highest death rate among children under 5 years of any city in the United States outside of Pittsburg. The matter was laid before the city council, which appropriated $3,000 for the erection of a sanitarium or pavilion to be located on the lake shore. It is about 40 feet wide and 80 feet long. It faces Lake Michigan on the east. The main entrance is in the middle, and at the rear of the main floor is the administration room, then a room for nurses, a diet kitchen, an ice-box, a bathroom with a set of six infants' tubs and the lavatory. Then there is a space entirely open and surrounded by a railing. Curtains can be raised in time of wind to protect this space. Hammocks are hung here and ten little cribs placed in the rear. We have already raised by a little work about $1,000 for the maintenance of this work for this summer, the idea being to call the attention of the public to the fact that there is here a vital problem. Let us become awake on this subject and realize that the babies under 5 years of age should be better cared for.

DR. T. W. KILMER, New York: The statistics seem to show a strikingly high mortality—33.5 per cent. In New York in our out-patient department our statistics are so much lower than that, that I would like to know if these babies were practically moribund when brought in.

DR. W. G. MURPHY, Hartford, Conn.: I won't guarantee the statistics. We had a very busy summer. Whether they are strictly accurate or not I do not know. But taking them as they are and deducting the cases of patients who came in moribund, we have a mortality of about 18 per cent. It is unfortunate that physicians will unload on us cases in which there is absolutely no hope. If I am not mistaken, the mortality of the floating hospitals is about the same as ours. Only desperate cases are sent to these hospitals; the mortality must be higher than other institutions. Our experience was that we got more money than we needed.

A NEW SIGN FOR THE DETECTION OF MALINGERING AND FUNCTIONAL PARESIS OF THE LOWER EXTREMITIES.

C. F. HOOVER, M.D.
CLEVELAND.

The sign I wish to describe is one which I have employed for the past two years. Although the cases observed number only four, I feel justified in attaching great importance to the sign because it is dependent on a normal function, which I find always exhibited in healthy persons and invariably present in the sound leg of patients suffering from hemiplegia or paresis of one leg due to some pathologic lesion.

If a normal person, lying on a couch in the dorsal position, be asked to lift the right foot off the couch with the leg extended, the left heel will be observed to dig into the couch as the right leg and thigh are elevated. If you place your hand under the tendo Achillis

of the left side and sense the muscular resistance offered by the left leg you will observe that the left heel is pressed on to the couch with the same force which is exhibited in lifting the right leg off the couch. In other words, the left heel is employed to fix a point of opposition against the couch during the effort at lifting the right leg. This will always occur if the healthy person makes a free and uninhibited effort to lift the right leg. Of course the opposition offered by the other leg is not essential to a successful elevation of one leg, but if a free effort of the will is made (no matter how slight the effort) the point of opposition made with the leg of the other side is invariably present unless some inhibitory impulse be sent to the opposing leg.

If the movements are carried out in the reverse order the same principle holds true; i. e., if a normal person be requested to press the right leg against the surface of the couch there will be a counter-lifting force exhibited in the left leg.

If a patient suffering from hemiplegia or monoplegia of a leg be requested to lift the extended and paretic leg off the couch it will be observed that the other leg offers the opposition above described whether there is any voluntary muscular strength exhibited or not on the affected side. I have had opportunity to observe this in a large number of hemiplegic patients and the opposition from the normal leg never failed.

If the hemiparetic patient is asked to lift the normal leg off the couch against resistance he will exhibit an opposition with the paretic leg which is directly proportional to the voluntary muscular strength he is able to employ when a display of voluntary muscular power in the paretic leg is exacted.

When the upper extremity is involved this sign is sometimes demonstrable on the normal arm, but at other times it is wanting.

In two cases in which paresis of one leg was claimed by the plaintiffs in suits for personal injuries, there were wanting the characteristic physical signs to sustain the claim of paresis of the lower extremity as the result of injuries. Furthermore, in both of these cases, when the patient was asked to lift the normal leg off the couch, the leg which was alleged to be very paretic was opposed strongly against the surface when resistance was offered to lifting the normal leg. When the patient was requested to lift the paretic leg, there was an apparent attempt to respond to my demand, but the normal leg did not offer the least opposition. The normal leg lay perfectly limp on the couch. Had the paresis been genuine, the sound leg would have been firmly opposed against the surface of the couch when an uninhibited attempt was made to lift the paretic leg.

The absolute lack of complemental opposition from the normal leg was also observed in a case of hysterical hemiplegia, when the patient was requested to lift the paralyzed leg.

In another case of hysterical para-paresis inferior, which was accompanied by abasia, the patient could bow himself into the pose of opisthotonos, but if he was requested to lift one leg off the couch there was no complemental opposition offered by the other leg and the leg which he seemingly attempted to lift would not be raised off the couch.

This sign appeals to me as being particularly valuable for the reason that it depends on the exhibition of a function from the normal leg which must always be present if the patient does not inhibit the normal impulses to the lower extremities.

In the four cases I have briefly described the complemental opposition was entirely wanting. Whether this lack of complemental opposition will always be found or not in malingerers and hysterical subjects remains for further observation to determine. But in view of the fact that complemental opposition is always present in a normal patient and in all patients with genuine paresis and genuine paralysis, we are justified in assuming the existence of cerebral inhibition to an apparent voluntary exhibition of strength when complemental opposition is absent.

If a malingerer were familiar with the object of the examination he could, of course, satisfy the demands of the examiner. In testing for this sign the examiner should seem to fix his attention on the leg which is alleged to be paretic.

In this manner I believe that one will always be able to trick a malingerer or hysterical subject into betraying the falsity of his claim.

I demonstrated the character and significance of this sign to one of the patients described. He promptly abandoned a crutch and cane, an orthopedic corset and blue spectacles and returned to work for the company against whom he had brought suit. The same course was adopted with the hysterical abasic patient. His gait became quite normal after a half hour's persuasion. Whether he later relapsed or not I do not know.

The sign in genuine hemiplegia which Babinski describes[1] for differentiating between genuine and functional hemiplegias depends on the affected side for its exhibition. I have found Babinski's sign unsatisfactory. The fact that this sign of complemental opposition is always present in normal subjects and in genuine paresis of the lower extremity, and the fact that it depends on an invariable function of the normal side gives it a very broad application.

702 Rose Building.

VENESECTION AND CARDIOVASCULAR AFFECTIONS*

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Venesection in cardiovascular affections is referred to by many authors, but it receives scant attention in actual practice. Recently, two physicians in active practice for several years reluctantly admitted at the bedside of a patient that they had never performed a phlebotomy.

That venesection has become neglected is due, first, to inherited prejudice because of its indiscriminate and unjustifiable use years ago, at which time it was the fashion to bleed healthy individuals each spring; second, to the fear that the abstraction of blood would weaken one already diseased; third, to the objection to its use by the laity, who are prone to believe that if death subsequently occurs, it is due to blood-letting; fourth, to a failure on the part of many physicians to recognize clearly the indications and limitations

1. Brissaud and Souquis: Article in Bouchard and Brissaud's "Traité de médicine," ix, 55.

* Read before the American Therapeutic Society, Philadelphia, May 7, 1908.

of this procedure; and fifth, to the erroneous belief that a small, weak, rapid pulse is an absolute contraindication to blood-letting.

Usually, venesection in cardiovascular affections is employed as a palliative or as a life-saving measure. As a rule, venesection becomes necessary in conditions in which the patient's life is in jeopardy, so that when performed, even though marked amelioration of symptoms is secured, many deaths eventually occur. Occasionally, however, certain death is averted.

Venesection is especially indicated in certain cases of valvular diseases of the heart with well-marked failure of compensation, in which the patient presents extreme dyspnea or orthopnea, cyanosis, tumultuous cardiac action, a rapid, small, feeble pulse, distention of the veins of the head and neck, a feeble apex-beat displaced to the left and seen and felt over a larger area than normal; increase in the area of cardiac dulness to the left and right, and not infrequently accentuation of the pulmonic second sound. Blood-letting is especially indicated if these symptoms and signs are progressive, despite the administration of the ordinary cardiovascular remedies. Under such conditions twenty ounces of blood should be slowly abstracted from the median cephalic vein. If degeneration of the myocardium is not extreme, the relief secured is immediate and satisfactory. Cyanosis disappears, dyspnea diminishes, the overdistended veins become less prominent, the heart becomes stronger and less tumultuous, and the radial pulse increases in strength and volume and decreases in rate.

In these cases a small, weak radial pulse is due to the emptying of the blood from the arterial system into the veins, which produces extreme overdistention of the right auricle and ventricle, preventing their emptying. The right ventricle is often so extremely dilated that its contractions are exceedingly feeble, and the pulmonic circulation is so greatly interfered with that but a small quantity of blood is delivered to the left heart. The extraordinary relief of symptoms, however, is often but temporary, although occasionally, in the interval, cardiac remedies are able to produce a favorable effect, which, before venesection, was impossible, so that gradually circulatory equilibrium is re-established and the patient recovers. Exudates in any of the serous cavities should be removed before resorting to venesection.

The cardiac signs and symptoms described may occur late in the disease affecting the mitral or aortic valves.

In mitral stenosis, accompanied by extreme right ventricular dilatation, with failure of compensation, venesection is of great value and often prolongs life.

In acute pulmonary edema, symptomatic of right heart dilatation, even when the patient is almost moribund, venesection often induces marked palliation and sometimes recovery follows.

In well-marked degeneration of the myocardium, venesection is valueless.

In failure of compensation, occurring in the course of arteriosclerosis, blood-letting is frequently of great value.

In aneurism of the arch of the aorta, dyspnea or pain may be temporarily relieved by the abstraction of eight or ten ounces of blood.

A not uncommon cause of death in acute croupous pneumonia is extreme dilatation of the right heart due to the obstruction in the pulmonary circulation caused by a consolidated lung. When, therefore, the symptoms and signs of right heart dilatation show themselves, venesection to the extent of twenty or twenty-four ounces becomes not only a palliative measure of great value, but occasionally saves life. It is important to accentuate that a weak radial pulse in croupous pneumonia, under these circumstances, is not a contraindication of venesection, but on the contrary a strong indication for its performance. In a certain number of these cases, it is most gratifying to observe a gradual progressive increase in the strength of the pulse while blood is escaping from the incised vein, illustrating strikingly the existence of an overfull venous system and a partially emptied arterial system.

Recently several physicians decided that venesection would in all probability hasten death in a case of pneumonia because the pulse was extremely weak. Reluctantly they consented to the abstraction of twenty-four ounces of blood and witnessed an increase in the force of the pulse during the operation, and later restoration of the circulatory equilibrium and recovery.

Certain of the deaths in pneumonia following venesection are due to a cardiac thrombus which had formed in the right heart, while dilatation was at its maximum, and prior to blood-letting. In other cases the myocardium was previously diseased, or the toxemia had already produced myocardial degeneration.

The danger of cardiac thrombosis is due not only to the overfilling of the venous system with blood and the slowing of the circulation, but also to the extraordinary increase in the coagulability of the blood in this disease; and therefore venesection should be performed promptly. As soon as early symptoms and signs of right ventricular dilatation show themselves, venesection should be performed, not only to prevent cessation of the heart-beat, but also to prevent cardiac thrombosis.

Rather uniformly hypertension, even to 220 mm. or more, has been observed in uremia and the frequent occurrence of arteriocapillary spasm has been recorded.

It is easy, therefore, to understand why, under these circumstances, sudden and extensive cardiac dilatation may occur, and also why the venous system should contain a relatively greater quantity of blood than normal. These conditions would be favorably influenced by venesection.

It is not within the scope of this paper to consider the relationship of phlebotomy to any other disease, but mention should be made of the benefit observed in certain cases of apoplexy, after blood-letting, by lowering the blood pressure and diminishing the amount of blood escaping into the cerebrum or from the meninges.

317 South Eighteenth Street.

INFECTION OF OPERATIVE WOUNDS BY MALIGNANT DISEASE.*

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WASHINGTON.

The question of most importance in all operative surgery is how to save human life, not only for the time, but to prevent a return of the morbid process whenever this is possible. Certain problems regarding the extension of malignant disease have engaged the attention of physicians for many years, and we have been impressed with the importance of further study of the danger of implantation of cancer and tuberculosis during the time we have a broad exposure of raw sur-

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908

faces, as during breast and pelvic dissections; as, indeed, any wound may be involved directly, or may be the port of entry of further extension of the disease in question.

I wish to call attention to certain cases in which carcinoma, sarcoma and tuberculosis have apparently made fresh and rapid extension after operations. This immediate invasion appears to indicate a close relation of cause and effect. My observations lead me to suspect strongly that cancer and possibly sarcoma may vary in the intensity with which they attack the tissues. This may be due either to cell activity or to diminished vitality or increased susceptibility on the part of the patient. To illustrate I will briefly report a case of rapid development of carcinoma in an abdominal incision after a Wertheim hysterectomy operation:

History.—Mrs. T., aged 38, had a vaginal hysterectomy in 1905. In two years there was a return of the symptoms, and she was found in what we unhesitatingly pronounced an inoperable condition. However, at her earnest request, nearly the whole vagina was removed along with pelvic glands which were undergoing softening and contained material resembling pus. The operation exposed ureters on both sides, and the vessels down to Poupart's ligament below, and some distance above the pelvic brim. In short, we continued the operation until further anesthesia was dangerous.

We felt absolutely sure that we had contaminated the raw surfaces within the pelvis as well as the abdominal incision, because the soft and necrotic glands could not be extirpated without rupture partly owing to their close attachment to the blood vessels. In a week we had wound infection with purulent discharge. In five weeks we had marked elevation of the upper margin of the right border of the incision. This soon developed a crater about half an inch from the skin margin. It is unnecessary to say that all attempts to treat this growth failed. In perhaps two weeks after the new growth above mentioned had begun, we noticed a much larger area of development on the left side of the incision. These two centers continued their development until nearly the whole wound presented every appearance of cancerous growth and this persisted and extended rapidly until the inguinal region was largely involved, and which later on caused the death of the patient, nearly one year after the second operation.

Two operations for tumors of the breast which were thought to have been carcinoma until microscopic examination proved them to have been sarcomata resulted in rapid universal or disseminated metastases. These were fatal in a few months, and were not, as was the carcinoma, retained as a local manifestation. Query: Was the rapid spread of the disease caused by exposing fresh-cut open lymph spaces and vessels?

We have found in one operation for tuberculous uterine adnexa which were suppurating, due probably to mixed infection, that the wound tract had evidence of acquired tuberculous disease. The very poor condition of the patient favored much suppuration, and drainage was continued for seven weeks. The wound tract remained unhealed for twelve or fourteen weeks, a sinus persisting all of this time, and this showed tubercle bacilli until healed. The patient was treated for tuberculosis by the open air and forced feeding method and is now (two years since operation) quite well, having gained twenty-five pounds in weight.

Finally, we suggest as a result of the findings in this case that many of our delayed recoveries are due to similar causes. Besides the very great danger of wound contamination during operations which should be avoided, there is, in certain instances, notably in old cancers, a very rapid systemic invasion which we usually attribute to "mixed infection." Just what this mixed infection is, and what it portends, have not been studied, because such delayed cases are generally considered inoperable. Does the accidental infection of the wound in a breast operation increase the danger of malignant invasion, or the contrary? Finally, if carcinoma and sarcoma are best eradicated by wide dissection, made far beyond the area of suspected disease, would it be possible to prevent immediate infection (with malignancy) by some sterilizing solution or other agent with elective affinity for pathologic conditions, yet which would not destroy healthy tissues nor prevent normal wound healing?

DISCUSSION.

DR. H. J. BOLDT, New York: It has been my custom for years in all operations for cancer to have the pathologist make serial sections of the surface, from the edges of the specimens removed and to satisfy myself whether or not I had probably done my operation in perfectly normal structure. With very few exceptions the report was that the operation was done in normal structures, and yet it is remarkable that in not a small percentage of those cases we did, in less than from one to two years, have recurrence of the disease in the field of operation; that is, in the scar tissue. It has struck me that there must be a predisposition, of what nature I do not know, nor do I think any one else knows, on the part of the patient, for recurrence to take place. There is something about carcinomatous patients that makes them likely to have recurrence unless extirpation is made far away from the original site of the disease. I do not know of a single instance in which the surgeon in operating for cancer became infected with the disease. In the large series of investigations made by Winter, particular attention is called to the vaccination metastases of carcinoma. There is so much research work to be done that I hope our pathologic laboratories will be able to throw some light on the subject.

DR. H. G. WETHERILL, Denver: It is perhaps not as well understood as it should be by the profession at large and by many operators that benefit may accrue from the use of some of the electrothermic instruments devised for the prevention of implantation and recurrence. I have had a good deal of experience with what is known as the Downes clamp, by which it is possible to do a hysterectomy without ligatures, to grasp the base of the broad ligament, close the venous channels and leave few raw surfaces. It certainly has very definite advantages. Possibly the members of this Section will remember that the statistics of Byrne, of Brooklyn, were far better in the freedom from recurrence of cancer than others had attained. His results were obtained through the use of an instrument resembling the Downes clamp. If the original incision through the vaginal vault is made with the cautery knife and then the broad ligament is clamped on either side there is less risk of implantation and of recurrence.

In connection with the cases operated on by Dr. Stone for a tuberculous sinus I might allude to the advantages which accrue from using a vaccine and particularly from the use of tuberculin in these old tuberculous sinuses. Of course, the treatment does not apply to cancer, but to various tuberculous lesions in which sinuses occur, such as from the stump of a ureter which it may have been impossible to remove after nephrectomy.

DR. GEORGE GELLHORN, St. Louis: All statistics on vaginal hysterectomy for cancer tell us that out of 100 recurrences 77 take place in the vaginal wound. While the majority of these recurrences are due to non-radical operation, yet many are unquestionably caused by contamination of the freshly opened lymphatics with cancer particles. To avoid these implantations, Mackenrodt of Berlin devised his vaginal hysterectomy by means of the cautery, the so-called igniextirpation. As you know, he preceded Byrne of Brooklyn by a few months. In 1898 I reported the late results of this igniextirpation in Mackenrodt's clinic. There were 39 patients operated on, with 4 recurrences, none of which were found in the vaginal incision. This goes to prove that implantation during the

operation had been avoided successfully. The careful observation of Dr. Stone is, in my opinion, a very valuable additional argument in favor of the postulate to avoid contamination of the wound in all operations for malignant disease. Reports are becoming more frequent that after the usual operation for ovarian cystoma cancer occurred in the abdominal incision. The conclusion, therefore, offers itself that we should, in such cases, make a long incision so as to remove the cystoma completely without opening it, rather than perform a short incision and let out the contents, because in the latter mode of procedure contamination of the freshly opened lymphatics of the abdominal wall can not often be avoided.

DR. G. BETTON MASSEY, Philadelphia: Dr. Boldt made the statement, which is familiar to us all, that we know little about cancer. I submit that Dr. Stone's paper and some other remarks made here this afternoon prove that we know more about cancer than we are acting on. We know enough to believe that it is a microbic disease, not only capable of being sown into the wound by operation too close to the disease, but also capable of being "milked" into the wound. In the ordinary operation of removing a breast or any other large organ watch any operator, if you do not critically watch yourself. How many times is the mass handled and accidentally squeezed by the assistant during the hour to an hour and a half that the operation lasts, without regard to the possibility of the cells being dislodged and implanted in the wound?

Have any present seen that form of recurrence of cancer of the chest called cancer *en cuirasse* that did not follow a knife operation? It may have been by one of the modern operations, but in which the cells were brought into intimate contact with the cut veins and lymphatics, permitting aspiration into the subcutaneous tissues. Whether or not we have found the germ of cancer we must alter our surgical procedures under the assumption that it is a germ disease, and either cut wide of the diseased area and try to prevent implantation, use the electrothermic method, or, still better, the electrochemical method that I have advocated, or in some other way prevent reinfection of the wound. The very criticism I have made of curettement in tuberculosis applies with far greater force to this operation for cancer, yet I fear it is still frequently practiced.

DR. D. H. CRAIG, Boston: I rise primarily to suggest an expedient which I have used regularly since a rather unfortunate case, closely resembling that of Dr. Stone, of infection of the abdominal wound. I desire to say first, however, that as a surgeon I can not allow the criticism of surgery which has just been made to go unchallenged. I think that the modern surgeon is not open to the criticism of milking a cancer breast on which he is operating before he severs the lymphatic connection. The method now in vogue of operating on a carcinoma of the breast is to start at the axillary attachment and sever the lymphatic connections downward from that breast before handling it. The breast can then be handled with much greater impunity.

An experience with an infected abdominal wound led me to adopt this technic. The operation was done through an incision sufficiently large not to cause bruising of the wall, for I believe cellular irritation to be one of the most important factors in the development of carcinoma, whether it be by direct trauma as we so frequently see it or by trauma of laceration as seen in the cervix. If we transplant the infection in doing hysterectomy we implant it on an irritated cellular structure which is a favorable site for the growth. My expedient is, after I have completed the operation and am ready to close up the wound, to take an entirely new set of instruments, not hitherto employed in the operation, and cut out all tissue around the incision which may have become infected.

DR. J. S. STONE, Washington: It seems to me that somebody ought to occasionally point out to us the fact that our beautiful surgery as yet has some defects. Conditions are not quite so bad as Dr. Massey would have us believe, but I think he is interested in another direction. I think, however, that the greatest possible care should be taken in amputation of the cervix and vagina, to close up as far as possible all opportunities for fresh infection. The Downes clamp seals only a certain portion of exposed surface: not one-eighth in the Wertheim operation or even in the ordinary removal of the uterus. In all operations an absolutely aseptic technic should be observed, remembering that the strongest chain is no stronger than the weakest link.

NASAL ANALGESIA AS A PROGNOSTIC SYMPTOM IN DRY CATARRHAL DEAFNESS.*

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The question of nasal analgesia in its relationship to so-called dry catarrhal deafness is one concerning which no references are to be found in aural literature, and one which has never been considered by the majority of aurists if we may judge from the replies which I received from twenty-five men in various parts of the country, to whom I addressed the following questions:

1. Have you ever noted marked nasal analgesia in persons suffering with so-called dry catarrhal deafness?
2. If so, have you ever noted this as a prognostic sign in the final results of the treatment?
3. Has this symptom been of any value to you in determining the prognosis in these cases?

I received seventeen replies and from no one did I receive an affirmative answer to the last question. Nearly all had noted the condition as existing, but had simply considered it as a natural condition in these cases.

About a year ago I was struck with the fact that many of the patients who consulted me for progressive deafness, presented at the same time a condition of manifest nasal analgesia. I mean by nasal analgesia, a condition of manifest insensitiveness of the nasal mucosa whereby one may accomplish all kinds of instrumental manipulations in these cavities without discomfort to the patient and without the use of any local anesthetic. Since that time I have made it a rule to examine closely for this symptom in every case of a patient applying for treatment suffering with what is usually designated as dry catarrhal deafness.

It is not my intention, even were I able, to consider in this short paper the pathology of deafness, for much is yet to be written and clinically studied before we can know anything definite about this subject. The work of Politzer, Moos, Siebemann, Gruber and others has done much to enlighten us on the micropathology of this condition; but even with this light we seem to be groping in the dark in our endeavors to find some treatment which will be curative in its results. There are a great many problems yet unsolved, whose solution will aid us much in the management of these cases, but until then clinical observation and correlation must make up the sum total, in a great measure, of our knowledge.

I speak of this condition as so-called dry catarrhal deafness, since this term conveys to most of us what is usually meant in these cases, though I am by no means free to admit that this is an appropriate term. One might be justified in using the word catarrhal in those forms of deafness in which there is a discharge from the ear, but in that form in which the pathologic condition is just the opposite, the term seems a misnomer.

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

I am fully convinced that the ideas promulgated in text-books and writings of the present day are in a great measure wrong as regards the cause of progressive deafness. By this expression, I do not mean the deafness occurring in children and young adults who suffer with adenoids, for here we recognize the causal relationship, but I mean those cases which creep on insidiously in young adults and in persons of advancing age who have previously shown no symptoms of nose or throat derangement.

Just as the treatment of atrophic rhinitis is the darkest page in rhinologic literature, just so the treatment of progressive deafness is the darkest in that of otology. Our programs are filled with papers on operative procedures in cases of sinus thrombosis and middle-ear suppuration, and yet where we see one case of this condition we see one hundred cases of patients seeking relief for no other condition than annoying tinnitus and increasing deafness. Text-books tell us that the most frequent cause of this form of deafness is a diseased condition of the nasopharynx or the nasal cavities, especially a stenosis of the latter. The patient seeks relief from the aurist and is treated to the same old dose of nitrate of silver to the nasopharynx, sprays to the nasal mucosa, followed by the use of the Politzer bag or the Eustachian catheter and bougie. This stereotyped form of treatment is soon recognized by all patients and they lapse back into the same old condition of pessimism.

Until we recognize the fact that the form of deafness usually attributed to a catarrhal condition of the nose and throat, is itself a distinct entity and its pathology still an unsolved problem, we can never advance to a point where the treatment must be adapted to each individual case. I am sorry that I have no new ideas to suggest as to the successful treatment of these cases, but the point I wish to mention in this paper is the symptom of nasal analgesia referred to and which perchance may prove a valuable point in developing the future management of this condition.

In a few words I will give my observations and deductions on the symptom of analgesia as it has been found in these cases of so-called catarrhal deafness.

What is meant by analgesia as it refers to the subject in question?

All rhinologists are familiar with the fact that the sensitiveness of the nasal mucosa varies with individuals under different conditions of the membrane itself. This may be accounted for on the basis of temperament; the phlegmatic individual being much less susceptible to this sensitiveness than those of nervous temperament. On the other hand, this lack of sensitiveness of the nasal mucosa will be found in varying degrees among patients who suffer from progressive deafness of the dry variety, in the study of which we will often find that it is not due to the temperament of the patient. The analgesia referred to in these individuals is not confined to the nasal cavities, for we also find it present in the ear itself. For instance, what patients with normal hearing apparatus could stand the use of the Lucae probe on the drum membrane or even other instrumental manipulations in this region? That the same pathologic causes which produce this condition in the nasal cavities also acts on the aural apparatus is evident. What these changes are must yet be determined. Branches from the same nerve trunk supply both organs with sensibility and whether or not the same degenerative and hypertrophic condition which exists in the cases of progressive deafness of the middle ear, is also present in the sensitive nerve terminals themselves, must as yet be determined.

I am convinced that this form of progressive deafness is a condition *sui generis* and that the mucous membrane in the nose, nasopharynx, Eustachian tube and middle ear, undergoes the same pathologic changes that are found in the nerve terminals which supply these parts. The more advanced are these changes in the mucosa and nerve terminals, the less favorable is the prognosis for the improvement of hearing. These same degenerative changes also finally take place in the auditory nerve itself as is evidenced by the tuning fork test and the histopathologic investigations of Moos, Politzer, Gruber and others. If then such changes do take place, which fact of course has not yet been conclusively shown, it would certainly seem to follow that a lack of sensibility in the nasal cavities means also a lack of sensibility in the middle and internal ears, with some changes in the auditory nerve itself. Basing the argument on these premises, it would also indicate that the more insensible to irritation a part is the less likely is it to be restored to normal sensibility. This certainly seems to be a law of our physical constitution manifested in various pathologic conditions of the human frame. For instance it is noteworthy how insensible are the nasal cavities in atrophic rhinitis.

These observations of mine and the report which follows must certainly be understood as distinctly preliminary, for it is only to call attention to this symptom and to ask for clinical observations from others that this paper is even presented. It may be that there are some who do not consider this a symptom in the prognosis whatever, but only a natural occurrence. Some may consider it only as a symptom of the temperament of the individual without any reference to its relationship to a diseased condition of the ear. My own conclusions are based on observations noted in twenty-five cases which have been followed for a sufficient length of time to warrant me in placing some value on this prognostic symptom. It is true that this is indeed a small number of cases on which to base a report, but what I have said is in no wise conclusive but is intended to direct others into the consideration of this subject of which no mention has as yet been made and in which there may be possibilities of an important prognostic sign.

Of the twenty-five patients twenty showed the accuracy of this symptom in the final prognosis, while in five it was decidedly uncertain. This symptom may also aid us in directing the line of treatment to those measures which will give more vitality to the nasal and aural tissues and to the nerves which supply their sensibility. Hence the value of potassium iodid in these cases.

In conclusion I can only say that this symptom has proved of decided value to me, for the results of treatment have uniformly been better when there existed a normal or abnormal sensibility of the nasal mucous membrane than when there was a decided symptom of nasal insensibility.

DISCUSSION.

DR. E. E. HOLT, Portland, Me.: I think that the analgesia of the nose is accounted for by inflammatory changes and by age. In manipulations about the eye in the latter part of manhood the sensibility is a good deal less. I have communicated with some dentists who tell me that the mucous membrane of the mouth is very much less sensitive in the latter part of manhood. This subject was brought to my attention by Dr. Burr, whom I have associated with me in work

on the physical economic value of man. In establishing the standard man of the different ages, infancy, childhood, youth, manhood, change of life and old age, Dr. Burr notes that all the mucous membranes are less sensitive at the latter part of manhood. You will notice in Dr. Bryant's paper that most of his patients are above 35 or 40. The period of manhood begins at 21 and lasts to about 50. One will notice in manipulating the mucous membrane about the distribution of the fifth nerve in patients of mature years that this membrane is less sensitive than in youth life. I have never seen this hypoesthesia in young persons; it is always in older people and it is caused by inflammatory conditions due to vasomotor disturbances and the changes due to age.

DR. J. HOLINGER, Chicago: In chronic suppuration of the middle ear there is a distinct loss of sensitiveness on the drumhead and in the middle ear, which is of prognostic value; but whether in spongification of the capsule of the labyrinth this holds good I am not prepared to say. In making the routine examinations of such an ear the catheterization of the Eustachian tubes often brings tears to the eyes of the patient. Furthermore, it is often necessary to rid the drumhead of scales or wax, and here also the patients give evidence of pain, showing rather the opposite of analgesia. Is there not a possibility that a great number of these patients, simply from sheer force of will power, try to overcome pain in order to give the doctor a chance to do everything in his power to help them? I think that it is more an evidence of will power than of lack of sensitiveness.

DR. C. F. WELTY, San Francisco: I have noted nasal analgesia always as associated with atrophy of the mucous membrane of the nose. I have further noted that ear lesions associated with this condition have been produced by nasal hypertrophy; that the atrophy is one of the later stages of hypertrophy, and that the ear lesions have been produced while in a state of hypertrophy. Furthermore, if otosclerosis happened to be associated with the analgesia it was simply a coincidence, and bore no relation whatsoever to the nasal analgesia.

DR. DUNBAR ROY, Atlanta: I had no reference to the earlier years of life, between the ages of 5 and 20, in which there are so many catarrhal conditions, as wrong tonsil and adenoid conditions, but to the advanced periods of life. It is true, as Dr. Holt has said, that there is this lack of sensibility in older persons, but in the cases I have reference to his theory does not apply. There is a marked difference between various old people of the same age in the amount of sensibility in the nasal mucous membrane. I had no reference to analgesia as a cause of deafness; I simply called attention to the association of this condition with the so-called progressive deafness and the possibility that it may throw some light on the subject of prognosis.

EXPERIMENTS TOWARD A PHYSIOLOGICALLY ISOTONIC SOLUTION OF SALTS.*

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The solution that is almost always employed by surgeons and clinicians for irrigations and intravenous injections is the so-called normal saline solution. This is a solution of NaCl in water varying from 0.7-0.9 per cent. in strength and agreeing approximately with the tonicity of blood, that being the only property of blood which at the time that this solution was devised was sufficiently understood to be imitated. Since that time physiologists, for experimental purposes, have vastly improved this solution, taking into consideration the action of other inorganic salts, besides sodium chlorid. Nevertheless, these advances have not been utilized to any considerable extent in practical medicine. Originally this research had for its object the investigation of the possible advantages of using clinically a solution which conformed more closely to blood than the ordinary normal saline solution. Saline solutions, such as those of Ringer, Locke and others, which have replaced almost entirely the ordinary sodium chlorid solutions in laboratories of physiology, conform more nearly to the inorganic constitution of blood. However, little attention has been paid to other important properties of the blood which until recently have hardly been understood. Among these are:

1. The correct H and OH ion concentration.
2. The capacity for maintaining the proper reaction in spite of increase in acid or alkali.
3. The capacity for the transport of carbonic acid.

In view of this, I turned aside for the present from my original problem in order to attempt such improvements as seemed possible in the light of these recent findings. The present communication is confined to a report of the results of this undertaking.

The practical problem then, in a case like this, is to choose those characteristics of blood which are essential, ensure their proper establishment and to include as many of the other characteristics as may readily be obtained without sacrifice of simplicity of technic and permanency of the solution. The solutions most frequently employed, where a physiologically normal saline solution is required, are solutions of NaCl of such a strength as to be isotonic with the blood. The tonicity has always been considered the essential point. The experiments of Ringer, Locke, J. Loeb and others, have shown the importance of the addition of K and Ca to the saline solution, especially when this was to be employed to maintain rhythmical contractions in the isolated heart. Hédon and Fleig,[1] starting from the assumption that a physiologic solution should correspond as nearly as possible to the blood, prepared a solution which in addition to Na, K and Ca, contained Mg, and phosphoric and sulphuric acid. All these solutions possess also a varying degree of alkalinity due to the addition of $NaHCO_3$. The exact amount of each ingredient varies with the author and, in each case, has been determined empirically. With no other test than the physiologic it is apparent that considerable variations in constitution need not necessarily produce any marked effect experimentally. With the exception of the total concentration, the tonicity, which is more or less definitely fixed, the rules for making up a physiologic saline solution are therefore very indefinite.

However, facts in regard to the maintenance of the proper neutrality and the equilibrium between acids and bases in general, by means of which the CO_2 transport is effected in the animal organism, have recently appeared which, when applied to the preparation of a saline solution, not only give us more definite guides, but make possible the preparation of a solution more nearly like blood than any other so far devised.

The data at hand regarding the concentration of the inorganic constituents of human blood are necessarily very insufficient. The methods for obtaining reliable information require the use of large quantities of blood, and it is, therefore, not surprising that the

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*From the Laboratory of the Department of Theory and Practice of Physic, and the Laboratory of Comparative Physiology, Harvard Medical School.

1. Arch. Internat. de Physiol., 1905-1906, iii, 95.

majority of the determinations have been carried out on the blood of animals. Through the work of Bugarszky and Tangl,[2] Abderhalden[3] and others, we have a fairly complete knowledge of the inorganic constitution and concentration of the blood of a number of the domestic animals, including the horse, cow, sheep, goat, pig, dog, rabbit and cat. It has been found that, in its general characteristics, the blood of these animals shows a marked uniformity both as among the various species as well as between the animal blood and the human. Moreover, it is known that the constitution of the blood of the same species, and even of the same individual, is subject to variations at different times which approximate closely to the variations observed in the analyses of the serum of different species.

The constitution of the fluid portion of the blood has been obtained by calculation from quantitative determinations of the blood corpuscles and of the serum. As, however, the methods available at present are not of such accuracy as to allow absolute dependence on figures obtained, it was considered wiser to simplify the procedure and to base the calculations for an artificial solution to resemble the body fluids on the figures for the serum, with the full realization that the result would be only a close approximation of the actual conditions. The human serum consists chiefly of water in which are dissolved about 8.5 per cent. solids. These consist mainly of albuminous substances and small quantities of sugar, cholesterin, lecithin and fat, and inorganic bases and acids. These latter are mainly Na, K, Ca, Mg, in combination with HCl, H_3PO_4, and H_2CO_3. By calculation based on the quantitative estimations of Abderhalden[4] of the inorganic content of blood serum the values shown in Table 1 were obtained in grams per liter:

TABLE 1.

Na_2O	4.45	Na	3.30
K_2O	0.26	K	0.21
CaO	0.12	Ca	0.08
MgO	0.045	Mg	0.03
Cl	4.0	Cl	4.0
P_2O_5	0.07	H_3PO_4	0.09

If these amounts are expressed as chlorids, phosphates and carbonates we obtain the results shown in Table 2:

TABLE 2.

KCl	0.40	K	0.21	Cl	0.19
$CaCl_2$	0.22	Ca	0.08	Cl	0.14
+6aq	0.4				
$MgCl_2$	0.12	Mg	0.03	Cl	0.09
+6aq	0.25				
NaCl	5.90	Na	2.32	Cl	3.58
				Cl =	4.00
NaH_2PO_4	0.11				
+1aq	0.126	Na	0.02	H_3PO_4	0.09
$NaHCO_3$	3.51	Na	0.96		
		Na =	3.30		

A solution containing per liter the amounts stated in Table 2 has precisely the same reaction as blood and possesses nearly the same power to neutralize both acids and alkalies, as shown by Henderson and Black.[5]

The correctness of the reaction was further clearly shown when tested with rosolic acid paper, and agreed fully with the observation made by me on blood and reported in a previous communication.[6]

The monophosphates now constitute about 10 per cent. of the total phosphates, and free carbonic acid about 6 per cent of the total carbonic acid. In other respects the proper relationship between the several acids and bases is automatically adjusted by this method of preparation.

The inorganic constituents being thus properly adjusted, it remains to consider the organic. It is evident at once that the proteins of the blood can not very well be introduced into an artificial solution. However, one of the important effects of the presence of colloids in blood, the increase of the viscosity, can very well be brought about in an artificial medium by means of a colloid or colloids that do not coagulate with heat and that are more or less inert, or at least innocuous, in the animal organism. Two such substances are easily obtainable, viz: gelatin and gum arabic. Albanese[7] has shown that a 2 per cent. solution of gum arabic in water has a viscosity closely resembling that of blood, and his perfusion experiments convinced him of the importance of this factor. A considerable advantage of gum arabic over gelatin solutions is the fact that the former remains liquid at the temperatures required in the preparation of the fluid. The sugar content of the blood likewise was approximated by the introduction of 0.15 per cent. dextrose.

The effect of the addition of the colloid was remarkable in that it increased the solubility of the calcium salts and apparently held them in solution at a temperature and a CO_2 tension that, without the presence of colloid, caused a precipitate. The solution thus prepared had a freezing point of —.58 C, corresponding to that of human serum, and its osmotic pressure was further tested physiologically by using it to make a suspension of blood cells. The red cells retained their shape perfectly.

In Table 3 I have placed side by side the ordinarily used Locke's solution, the solution of Hédon and Fleig[8] and my own:

TABLE 3.

	Locke	Hédon and Fleig	Author
NaCl	0.9	0.6	0.59
KCl	0.025	0.03	0.04
$CaCl_2$	0.023	0.01	0.04
$MgSO_4$	....	0.03	$MgCl_2$ 0.025
NaH_2PO_4	....	0.05	0.0126
$NaHCO_3$	0.02	0.15	0.351
Glucose	0.10	0.10	0.15

It will be seen that in regard especially to NaCl, $NaHCO_3$ and NaH_2PO_4 these solutions differ considerably from one another. Locke's solution contains sufficient NaCl to produce an isotonic solution without any further additions. In other words, this solution must in most cases be slightly hypertonic. The omission of Mg and P_2O_5 from Locke's solution, while probably not important, certainly does to some extent affect the final equilibrium between acid and base. The $NaHCO_3$ is much too low to obtain the correct reaction. The same is true of the solution of Hédon and Fleig who on that account probably have kept the $CaCl_2$ so low. The solution suggested in this communication contains a comparatively large amount of $NaHCO_3$ and a small quantity of NaH_2PO_4 which together produce an equilibrium able to maintain the necessary amount of calcium in solution. If the $CaCl_2$ and the NaH_2PO_4 are separately dissolved and mixed with the other substances already in solution, no precipitate appears. If all the salts, however, are placed together in the necessary quantity of water a certain amount of calcium phosphate is formed. This precipitate will readily go into solution on passing CO_2 through the

2. Arch. f. d. ges. Physiol., 1898, lxxii, 531.
3. Ztschr. f. physiol. Chem., 1898, xxv, 67.
4. Abderhalden, E.: Ztschr. f. physiol. Chem., 1898, xxv, 67.
5. Am. Jour. Physiol., 1907, xviii, 250.
6. THE JOURNAL A. M. A., 1907, xlix, 461.
7. Arch. f. exper. Path. u. Pharmakol., 1893, xxxii, p. 297.
8. Arch. Internat. de Physiol., iii, 95, 1905-1906.

liquid. The reaction, however, will become more acid. After the salts are in solution, the excess of CO_2 can be driven off without causing a reappearance of the precipitate.

Aside from theoretical and practical chemical considerations, it seemed desirable to test the correctness of the solution as a physiologic fluid by experiments with the living organism. The molecular concentration of the fluid, as above stated, was made to approximate that of cat's serum by the addition of 0.15 per cent. NaCl. A number of experiments were conducted to determine how long an isolated cat's heart would beat rhythmically when perfused with this solution. The apparatus used was the one described by Cleghorn.[9] The cat's heart was removed as quickly as possible from the animal, and after it had freed itself of blood in a saline bath, was tied to a canula passed into the aorta just above the coronary orifices. The solution was then forced through the coronary arteries under a constant pressure of 60 mm. of mercury. The whole apparatus was kept at about 35 C.

The results obtained proved that this solution was well adapted to the requirements of a circulating fluid. In one case, under unusually favorable conditions, rhythmic contractions were maintained for 21 hours after the heart had been removed from the cat. No difference could be observed between the solution made up as above and one from which $MgCl_2$ had been omitted, and the NaCl content correspondingly increased. In regard to the viscosity, the solution containing 2 per cent. gum arabic gave rather less satisfactory results than the one without it. This could be explained possibly by the increase in K content of the solution, due to the gum arabic.[10]

It is worthy of note that the best results so far were obtained with those solutions which had no oxygen added. As the water was always freshly distilled, it is not likely that any large amount of oxygen was present, and it is conceivable that the CO_2 content of the solution acted as a stimulus. Furthermore, the solution is capable of holding and removing considerable quantities of CO_2, which, possibly, is quite as important as the presence of oxygen. Several experiments were tried in which the solution was saturated with oxygen and then perfused under oxygen at pressures of from 50 to 80 mm. of mercury. It could not be observed that this caused any more favorable result.

CONCLUSIONS.

While the experiments are as yet incomplete it is, perhaps, not too early to say that the solution described above has certain qualities that recommend it for physiologic use. It approximates blood serum closely in its constitution, in the concentration of its various components and in reaction. It provides a mechanism, on the one hand, for maintaining the reaction, and, on the other hand, for neutralizing acids and alkalies. It provides for the transport of a sufficiently large amount of CO_2. The clinical application of this solution is still under investigation.

It is a pleasure to record my indebtedness to Dr. L. J. Henderson for help in the calculations, and to Dr. W. T. Porter for much valuable guidance as well as for generously placing their laboratory facilities at my disposal.

9. Am. Jour. Physiol., 1899, ii, 275.
10. Locke: Jour. Physiol., 1895, xviii, 332.

Clinical Notes

GANGRENOUS APPENDICITIS COMPLICATING HERNIA.

OCCURRING THREE WEEKS AFTER BIRTH IN A PREMATURE CHILD.

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History.—R. T. was born March 31, 1908, six weeks before the end of a carefully computed term of pregnancy. He was the third child of a physician. His mother and one of his brothers had been operated on for appendicitis. Two weeks after birth his weight was five pounds and four ounces. Considering the circumstances, the child seemed normal and gained satisfactorily in weight. Thus on April 7 his weight was five pounds and two ounces and on April 11 five pounds and eight ounces. Shortly after birth a small reducible tumor was noted in the right inguinal region, the enlargement gradually extending into the scrotum. When the child was three weeks and three days old the father called in a physician, who applied a truss with a small wooden pad, the hernia being apparently thoroughly reduced. The truss was put on about 5 o'clock in the afternoon, and from the first caused the child to become restless and to cry, so that at the end of four hours the appliance had to be removed. The baby, which was breast-fed, refused to nurse, even though it was thought that the source of irritation was no longer present. The mother made repeated efforts to cause the child to take the breast, but after a few minutes it would cease and cry out, and there was regurgitation of the ingested milk. By 7 o'clock in the morning the parents noted a great change in the baby's expression. The fontanelle was distinctly sunken, and the face began to have the hollow-eyed, bluish appearance so characteristic of impending collapse. The hernia could apparently still be reduced, but there remained a slightly indurated mass in the scrotum, and there was some edema of the prepuce.

Examination.—I saw the patient with Dr. Edward W. Perkins just twenty-four hours after the application of the truss. Locally the appearances were as described; the abdomen, however, was rigid and distended, and attempts at physical examination caused straining and crying. The bowels had moved twice and some flatus had been expelled. While I was present the baby had a sinking spell and had to be revived with a little diluted brandy. The temperature was taken and found to be below 96 F. The urine was high-colored, staining the linen.

Operation.—Recognizing that we had to deal with an extremely desperate condition, I advised an immediate operation, being under the impression that strangulation in some form existed. The baby was accordingly removed at once to Mount Sinai Hospital, where I operated an hour later under general anesthesia by chloroform and ether, administered by Dr. T. L. Bennett. By the time we were ready to operate, intra-abdominal tension had still further increased, and the hernia could be with difficulty reduced, so that efforts at taxis were abandoned and the usual incision for herniotomy was made. On opening the sac, a distended coil of large intestine lay before us, constricted at the neck to such a degree that I did not deem it safe to make efforts at replacement until the constriction had been relieved by incision. This was at once followed by a gush of serum amounting to at least three or four ounces, and I was able with ease to reduce the greater part of the hernia. With gentle traction I then withdrew from the scrotal sac the slightly adherent appendix, the distal half of which was black and obviously gangrenous. A single ligature caught the organ at its base as well as the meso-appendix; ablation was performed with the scissors. Gauze packing was held in place by a firm bandage of gauze and then starch, the patient's leg being included down to the foot in the extended position and the bandage still further reinforced by wooden splints. There was no attempt whatever to close any part of the wound. The time of the operation was twenty minutes, and the baby was taken home as soon as the work had been completed.

Bacterial Examination.—Culture from the interior of the appendix showed the presence, even at this early date, of the colon bacillus, in spite of the fact that the child had been breast-fed throughout, and had only on one or two occasions tasted unboiled water. The examination was made at the pathologic laboratory of Mount Sinai Hospital, the culture being examined by Dr. Sophian and the result confirmed by others of the staff.

Recovery.—Six days after the operation the dressing was changed, most of the packing was removed, and the uneventful recovery was complete two weeks from the time of the operation. There was a steady gain of weight from the first until on May 7 the child weighed seven pounds and four ounces. The boy seems to have recovered perfectly, but I am told that there is some colic which comes on fifteen or twenty minutes after each nursing. The stools, however, are free from mucus and are of normal color, frequency and consistency. The mother thinks that the apparently irritant quality of the milk may be due to extraordinary worry in domestic affairs.

The technic followed in this case, namely, treating the wound without suture and by intraperitoneal packing alone was employed by me with equal success in a child operated on about seven years ago in the practice of Dr. Henry Heiman. This patient was only eight days old. There was strangulation of a right inguinal hernia. The operation for its relief was extremely difficult because we feared to give more than the smallest possible quantity of anesthetic, chloroform, and owing to the struggles of the child there was almost complete evisceration. In spite of this the patient recovered and the hernia has not recurred.

It is probable that in the present case when the truss was applied the cecum only was replaced, the pad resting directly on the base of the appendix, interfering with its circulation and giving rise to an amount of traumatism sufficient to cause permanent thrombosis and consequent gangrene which naturally could not be relieved by the removal of the pressure.

TETANY IN AN INFANT FOUR DAYS OLD.

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Conditions associated with tetany have an added interest just now because of the studies of MacCallum, Pfeffer, Mayer, Escherich and others on the parathyroids. The following case is, therefore, instructive:

History of Mother.—A. M., aged 25, was seen June 8, 1908. She had been in the second stage of labor for twelve hours. Her physical condition was excellent except for the presence of a small thyroid enlargement. The goiter was about 12 cm. to the right of the midsternal line. Her pulse never rose above 84. The child's head was on the perineum. The fetal heart gave slight evidence of irregularity during pains, but was about 140 to the minute. About one and a half ounces of chloroform were administered and an unusually large boy delivered, uncorrected weight 14 pounds, corrected weight not less than 9¾ pounds. It was the largest baby I have ever delivered, the average weights of 47 babies in my records being 7¼ pounds, hospital and private practice.

History of Child.—The baby was finely formed, with a sound head and slight *caput succedaneum*. A second degree tear in the mother, required five silkworm sutures. The child was unusually clean when born, with a most curious and unusual bright red scarlatinaform blush over its entire body. Shortly after birth the nurse directed my attention to repeated vomiting of a frothy serum. There were no injuries anywhere: the body, scalp, head and extremities showed no marks of any kind. It slept well and took the breast well. The prepuce was completely closed. This was relieved by circumcision eighteen hours after delivery. There were no nervous symptoms noted during the first, second or third day, although the curious frothy vomitus continued at intervals. He was put to the breast three times each day until the third, when the feedings were brought more closely together.

At birth, although the family history was clean, two drops of 2 per cent. solution of nitrate of silver were instilled as a prophylactic. The next day much pus was present in the left eye, which was also swollen. The pus was examined and contained no gonococci. Boracic acid washings were continued for three days. A red, papillary, exanthematous condition also existed in the mouth, on the tongue and buccal mucous membranes. This did not interfere with nursing, yet the boracic acid was always used before the infant was given the breast. From five to ten black, green and mucoid stools began to pass on the second day.

On the fourth day I called the nurse's attention to the tetany-like movements of the hands, arms and legs of the child. At this time they were scarcely noticeable. She attributed them to some warm sterile water which she had just given the baby. She had not observed them before.

At my second visit on this day the contractures, athetoid tremors (for the amblitude was too small to call them movements) were paroxysmal, the skin alternately wrinkled and tense, some dyspnea and temporary cyanosis. There was no rise of temperature, but the pulse often became uncountable.

From the fourth to the ninth day the typical athetoid movements, extended joints, separated fingers, the thumb contracted on the palm, folded arms and moving elbows made the diagnosis certain.

The convulsions never lacked the movements so distinctive of tetany. The cyanosis grew steadily worse and the pulse often disappeared. Opisthotonos was never present.

Trousseau's and Chvostek's signs were present. From careful external percussion and auscultation the stomach was not dilated. There was no evidence of rickets or history of it in either parent's family.

Cold sponges, warm baths and sodium bromid were of no avail. Ice packs to the spine and head, chloroform and all of the tried remedies failed to keep the infant from passing out. No section was permitted. I arrived two hours after the termination. The body was a bluish black. The body was so perfectly formed, so well molded and well nourished that I could scarcely believe the child dead.

Osler says that tetany is an extremely rare disease. Two years ago he collected 163 cases, including those at Johns Hopkins. He says it bears a definite relation to infections, rickets and gastrointestinal disorders. My patient is perhaps the youngest in the literature.

1. Was the tetany due to an inherited defect of the parathyroid? Such a theory appeals to me because of the mother's goiter.

2. Was it due to boracic acid toxemia? The cord was dressed with boracic acid, the eye was being irrigated with boracic acid, and the mouth was being washed before each feeding with boracic acid.

3. Was there any relation between the nitrate of silver conjunctivitis and the nervous explosions shown as tetany?

4. Was there a hemolysis of the infant's blood from the rich serum of the mother obtained from too frequent intervals of breast feeding during the first days?

5. Was there an infection from the early circumcision which produced the tetany?

6. Was there some gastrointestinal factor due to an unusually rich mother's milk?

7. Did all or any of these causes produce the fatal tetany?

Evidently there was no infection present. The hemolytic theory may be dismissed because the sera are homologous. The absence of a dilated stomach and the precedents in the case of the mother's milk and fre-

quent early feedings, reduce the gastrointestinal factor to a minimum.

I hardly believe enough boracic acid or nitrate of silver could be absorbed to produce a fatal result. There is nothing then left to blame but the parathyroids. The goiter and scarlet rash point to them. Since a section was refused, it is mere speculation.

Next to the diseased parathyroids as a cause, the weight of facts is in favor of the stomach and intestines as a possible cause. The early and frequent vomiting, which increased, and superimposed a diarrhea when frequent feedings began, have led me to feel that I made a grave error in not adopting a starvation policy at the onset of the prodromal symptoms.

1937 Madison Avenue.

PYOXEPHROSIS AND CEREBRAL ABSCESS.

WILLIAM P. WILLARD, M.D.
SAN FRANCISCO.

The following case is of interest on account of the supposedly metastatic cerebral abscess being caused by an entirely different organism from that which infected the kidney and also because of the duration and course of the two conditions.

History.—J. N., aged 30, single, bartender by occupation, was at the age of seven run over by a sleigh and the left side of his head was injured. At eighteen he contracted gonorrhea, the discharge of which ceased after about three weeks treatment. Had led an irregular life and had used alcohol freely. Two years ago he began to suffer with pain in the lumbar region and more or less irritation on urination. This had persisted for about a year when I first saw him. At this time I found a well-nourished man of extremely nervous disposition. Nothing abnormal found in heart or lungs, kidneys not palpable and no pain on pressure; prostate enlarged, soft and the secretion full of pus cells. Urine contained nothing abnormal excepting a few pus cells. Cytoscopic examination showed nothing abnormal in the bladder. I treated the prostate for several months, and as the character of the secretion improved he complained less of the pain in his back.

Examination.—On Dec. 1, 1907, he came complaining of severe pain in the left lumbar region. Pressure over the left kidney caused some pain. The urine contained a few pus cells (2 or 3 to the field), as it did on the first examination. I again cystoscopized him and catheterized the ureters. On the left side the catheter could be introduced only about two inches when it met some obstruction, and although the catheter was left *in situ* for some time no urine was obtained. On the right side the catheter was passed just far enough to collect urine for examination. This showed nothing abnormal. Two days later I again catheterized the left ureter, and although I was able to push the catheter to the pelvis, still I obtained no urine. Radiographs showed nothing. An indefinite mass could now be felt in the left kidney region, the palpation of which caused an increased pain. Blood examination showed: December 10, 9,300 white cells; December 14, 11,400; December 19, 11,000. The highest temperature was 100 F.

Treatment.—Dec. 19, through a left lumbar incision I opened a cavity containing about a quart of greenish yellow pus, smears from which showed many red-blood cells, few polymorphonuclear leucocytes, very many short encapsulated Gram-staining bacilli (pneumobacterial infection). Pus drained freely from the wound and also into the bladder. Ten days later the patient had a severe chill, a temperature of 105 F. and a white count of 23,400. On exploring the wound the finger pushed into another cavity containing about half a pint of pus. After this the temperature fell and remained normal until he left the hospital. A few days before the operation the patient complained of pain in the left ear, which disappeared for several days after the operation, when it again recurred. The aurist, Dr. Rosenthal, reported at this time that there was a slight exudate in the middle ear, which disappeared after Politzerization, but nothing to account for the pain. The pain increased in severity, extending from the auricular region, including the left frontal region, and later to the left occipital region. On pressure the pain was not increased, but percussion over the left temporal region was very painful.

Blood examination Jan. 13 showed reds, 4,300,000; whites, 8,200; hemoglobin 90 per cent.; polymorphonuclear leucocytes, 72 per cent; mononuclear leucocytes, 16 per cent.; eosinophiles, 1 per cent. The pain continued with exacerbations, especially at night, until Jan. 25, when the patient against my advice left the hospital.

Subsequent History.—For three weeks I saw him every day and he seemed at first much improved. Not only was the pain in the head less, but also the lumbar wound began to close and he gained a few pounds in weight. Later I noticed he became dull and was slow in comprehending what was said to him. Feb. 15, on going to his lodging, I found him suffering from intense pain over the left side of the head, incontinence of urine and feces, projectile vomiting and inability to move his left arm and leg freely. Temperature, 97 F. The following day the slight paraplegia had disappeared and nothing definite in the localization of the trouble could be found. Rectal temperature for three days was from 97 to 98 F.; pulse, 68 to 80; average white blood count, 13,200. On Feb. 19 I trephined the skull two inches anterior and one inch superior to the left external auditory meatus and introduced a small needle one inch into the brain substance and withdrew pus. The opening was enlarged and a large amount of greenish-yellow pus exuded. Exploration showed a cavity about four inches long by two inches in diameter. Smears showed much granular detritus, few polymorphonuclear leucocytes, few encapsulated Gram-staining bacilli and diplococci; streptococci were present in pure culture. After the operation the patient felt much better and was free of pain for twenty-four hours. The pain recurred and examination of wound showed a great increase of intracranial pressure, so that the brain substance was forced into the drainage tubes, blocking them. They were removed and a small amount of pus exuded from the wound. On attempting to reintroduce the tubes the patient became suddenly unconscious and almost pulseless. By stimulation his condition improved, but a left hemiplegia ensued and twenty-four hours later he died.

Autopsy.—At autopsy the remains of the left hemisphere of the brain was very friable and the meninges over both sides were covered with purulent exudate. The heart, lungs and liver were normal, the spleen enlarged, a fibrous capsule was all that could be found of the left kidney, while the right was greatly hypertrophied.

2672 Pine Street.

A SIMPLE AND EFFICIENT DEVICE FOR FILLING AND EMPTYING PIPETTES.

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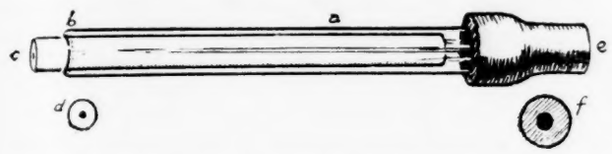
ST. LOUIS.

The device here illustrated I have found so easy to make and so efficient in application that I trust it may be of value to others. The parts consist of a glass tube (a), a medium hard, thick-walled rubber tube (c) with small lumen (d) for a piston, and a soft thick-walled rubber tube (e) with small lumen (f) for connecting the glass tube with the pipette. The piston tube (c) may be a solid medium hard rubber cord if obtainable, and the connecting tube (e) any soft rubber tube, but I have found the parts described very satisfactory. The piston tube here used is abdominal supporter tubing, and the connecting tube is the soft rubber tubing used for the flexible connection of antitoxin

syringes. The piston tube should fit the glass tube very loosely before the end of the latter is constricted (b).

To make, cut the parts the desired length, hold the end of the glass tube in the flame until the melting of the glass contracts the lumen at the end of the tube sufficiently to constrict slightly the rubber piston tube when it is introduced; draw a piece of glass in the flame, make two small plugs or beads with which stop the ends of the piston tube, insert the piston tube in the glass tube and connect to the pipette with the soft rubber tube.

To use it, turn and draw out gently the piston tube, which will fill the pipette as gradually as desired, the liquid remaining stationary in the pipette when letting go of the piston tube, making it easy to stop at any desired graduation mark, and the liquid may be forced out or taken in easily and accurately with perfect control of the column of fluid in the pipette when filling or emptying. It can be used with one or both hands. It is easily cleaned, if necessary, by pulling the piston entirely out. The one illustrated will fill a 1 c.c. pipette and it could be made with a greater or less capacity by



A device for filling or emptying pipettes or droppers; approximately actual size.—a, glass tube, 7 cm. long, 6 mm. diameter, 5 mm. lumen; b, end of glass tube slightly constricted; c, piston, 8 cm. long, 4 mm. diameter, 1 mm. lumen; d, cross-section piston; e, connecting tube, 2 cm. long, 7 mm. diameter, 2 mm. lumen; f, cross-section of connecting tube.

cutting the parts longer or shorter, or by using larger or smaller glass and rubber tubes. The soft rubber connecting tube is readily connected to pipettes with ends from two to six mm. in diameter. It may be adapted to any pipette in which perfect control of the liquid is desired or to any dropper when accuracy in dropping is wished. I have used it satisfactorily on blood pipettes, tuberculin pipettes and droppers for various purposes.

The special advantages which I have found in this device are its simplicity and cheapness of construction, its adaptability to various pipettes, the ease with which it can be cleaned and the perfect control of the column of liquid which it assures.

4283 Olive Street.

ENDOTHELIOMA OF SCAPULA WITH REMOVAL OF ENTIRE BONE.

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Patient.—X., aged 36, a carpenter, married, was first seen Jan. 18, 1908, when he complained of a painful growth on the shoulder.

History.—The family history was negative, there being no history of cancer in the family. He had had malaria and pneumonia, from both of which he recovered perfectly; he had had no other illness. He first noticed the growth about April 1, 1907, when it began as a small lump, "painful from the beginning." It continued to increase in size and the pain continued, and about Nov. 1, 1907, he began to lose weight. During the first part of January he began to have a little fever, felt weak and could not work, so he came to the doctor.

Examination.—Man was of average height, well built and slightly cachectic. Examination of the heart and lungs was negative. Pulse, 100; temperature, 99 F.; respiration, 24. There was a tumor on the scapula, with the larger portion below the spine, but covering outer portion. It was round, hard and painful to pressure and measured 10 cm. (4 in.) in the widest diameter and 13 cm. (5 in.) in length. It was firmly attached to the underlying bone. Examination of the urine showed: Reaction, acid; sp. gr., 1020; albumin, slight trace; sugar, absent; a few hyaline and granular casts; granular urates and epithelial cells. Blood examination showed: Red cells, 3,500,000; leucocytes, 7,000, and hemoglobin, 60 per cent.

Diagnosis.—The clinical diagnosis was: Probably sarcoma. Microscopic examination by Dr. Martland of the Russell Sage Institute of Pathology, New York, showed an atypical endothelioma. "Many of the lymphatics are plugged with large endothelial cells. Some places tumor has apparent spindle-shaped cells simulating sarcoma."

Operation.—This was performed Jan. 25, 1908. An incision was made along the vertebral and spinal borders by the usual technic, tying the main arteries as they were reached. The wound closed by primary union, the patient leaving the hospital in three weeks.

Examination of Tumor.—The neoplasm was round, hard and of straw color; it possessed a thin capsule. A cut section showed jelly-like consistency, with but few blood vessels.

Postoperative History.—The patient has gained to date about 30 pounds. He can use his forearm perfectly and has complete control of the hand movements. His arm is improving all the time and he is holding the position of night watchman.

Therapeutics

CARBONIC ACID.

Dr. Thomas E. Satterthwaite, New York (postgraduate January, 1908) discusses the medical uses of carbonic acid gas. He reminds us that "carbonic acid is a normal constituent of the body, entering it as carbon, it is converted by an excess of oxygen into carbonic acid or urea, which in decomposing gives off carbonic acid." It is a normal constituent of the blood, and in arterial blood is about twice as abundant as oxygen, the latter being present in about 20 per cent. by volume. In venous blood there is a still larger amount of carbonic acid, viz., 48 per cent. by volume. He states that in arterial blood about all the oxygen present is found in the red corpuscles, while less than 1 per cent. is in the serum; in venous blood the serum contains the largest amount of carbonic acid, while perhaps about one-third is in the corpuscles. "One per cent. of carbonic acid gas in the atmosphere is recognized by its peculiar odor, and is intensely disagreeable to the one inhaling such air, but 3 per cent. produces no permanently deleterious effect, while 5 per cent. causes dyspnea and 10 per cent. narcotism. Water takes up hardly 3 per cent. of the gas."

Satterthwaite does not discuss the effervescing drinks or the value of effervescing waters from the carbonic acid standpoint, but he describes the advantages of the carbonic acid baths, especially as used for disturbed conditions of the circulation. These baths, the so-called Nauheim baths, contain carbonic acid, "which decreases the pulse rate and at the same time regulates the circulation in gout and rheumatism by dilating the capillaries and smaller vessels and by directly and indirectly stimulating the nervous centers, while the peripheral nerves are soothed." This brings more blood to the

surface, and, causing equalization of the circulation, tends to dissipate internal congestions and local congestions and would tend to improve general metabolism. The indication for such baths, then, would be in circulatory insufficiency as in chronic heart diseases, in neuroses, in neurasthenics, in gouty conditions and joint disturbances and in the disturbed metabolism of lithemia or so-called uric acid conditions.

Satterthwaite states that Franzensbad, in Bohemia, is visited by female patients who are sent there for the carbonated bath treatment of inflammations of the pelvic organs. It would seem that improvement of such conditions would be from the general improvement of the health and nutrition, such improvement tending, of course, to lessen a chronic inflammation or induration. "In neurotic patients who have been previously quieted only by drugs these carbonated baths, kept up for hours at a time under the care of a proper attendant, have given great relief without any other form of treatment." The advantages of such treatment of nervously excited patients, as in mania, have been demonstrated at the Manhattan State Hospital for the Insane on Ward's Island, New York.

One of the oldest methods of using carbonic acid gas is the dry plan, and this method has been used in Franzensbad, in Bohemia, where the gas is collected in rooms in which the patients sit in chairs and take the baths without removing their clothing. The gas is, of course, heavier than air, and hence in small amount rises but a few feet from the floor. Patients subjected to such a carbonic acid foot bath soon feel "a tingling in the feet and legs up to the level of the gas and subsequently an agreeable sensation of warmth, due to the dilatation of the capillaries." The water carbonic acid bath, however, adds to the advantage of the warm water, the action of sodium chlorid and calcium chlorid. The action of these slight local irritants intensifies the dilating action of the surface vessels, and there follows such baths a longer continued lowering of the general blood pressure and therefore a greater equalization of the circulation.

Carbonic acid baths may be made at home. The ingredients for such baths are prepared by pharmaceutical firms and may be obtained from most drug stores. The solutions, powders, or tablets, depending on the mixture used, should be placed on a rubber foot pad in the bottom of the bath. These ingredients generally consist of sodium bicarbonate, sodium chlorid and calcium chlorid. Sometimes acid sulphate of sodium tablets with sodium bicarbonate are used for the production of the effervescence. Full instructions come with each package, and generally enough material for twelve baths. A single such bath will cost about 75 cents.

ICHTHYOL.

This is a non-official but much used preparation. It is a chemical combination of ammonium with a sulphonic acid obtained by dry distillation from the bituminous shale found in the Tyrol. This shale contains the remains of fossil fishes. The chemical name is ammonium ichthyosulphonate or ammonium sulphoichthyolate. It contains a great deal of sulphur, and the preparation was brought to the notice of the profession by Unna, and was recommended for external use in skin diseases. It is a thick brown liquid which will mix with oils, fats, and with water.

It is a mild antiseptic and resorbant. When mixed with glycerin or olive oil in from 10 to 50 per cent. it has been applied to boils, indurations, inflamed joints, and to chemically inflamed parts. If frequently painted over a part it may cause blistering, but once or twice painting the skin will cause mild counterirritation. It has been recommended lately as a local application to stop pain in neuralgia. Combined with glycerin (10 per cent.) it makes a valuable vaginal tampon to reduce indurations and inflammations of the pelvis. It has been recommended for all kinds of skin diseases, both as an antiseptic and as a stimulant in chronic inflammations. In acute inflammatory conditions of the skin, as erysipelas and burns, weak solutions have been used with apparent advantage.

Ichthyol has had considerable use internally in pulmonary tuberculosis. Its principal value in these instances is, probably, as an intestinal antiseptic. The appetite often increases and there is less intestinal fermentation, it acting in this manner much like creasote. The best method of administering it for this purpose is with an equal part of water, and, beginning with one drop of this solution three times a day, gradually increase it to ten or more drops. Pills or tablets of ichthyol may also be obtained. The same precaution in using excessive doses should be taken as in using large doses of creasote, viz., that it soon may over-stimulate the gastrointestinal canal and a loss of appetite occur. It is also used internally for acne when this is due largely to intestinal fermentation. It may be ordered in pill form for this condition as follows:

R.	gm.	
Ammonii ichthyosulphonatis		or
Pulveris glycyrrhizæ	3	ää, gr. xlv

M. et fac capsulas 20.

Sig.: One capsule three times a day, after meals.

PERICARDITIS.

The pericardium, like any other serous membrane, may suffer from an acute, subacute or chronic inflammation. There may be only sufficient exudate to produce a dry pericarditis, or there may be an effusion in the pericardium more or less in amount, which is generally serous, though, in rare cases, it may become purulent. From dry pericarditis, or after the absorption, or after the evacuation of the serous or purulent exudate, or from an injury, adhesions may form and a condition of adherent pericardium results.

A primary pericarditis is rare. It is generally a secondary condition either to an acute infection, and most frequently inflammatory rheumatism, or to a chronic condition, most frequently chronic nephritis. The development is often insidious, at times even without pain, and in diseases such as follicular tonsillitis, which may be rheumatic, acute inflammatory rheumatism, chorea, and cerebrospinal meningitis, the heart should be daily examined so that beginning inflammation, either pericardial or endocardial, may be immediately discovered. The pericardial friction murmur is diagnostic, but this pericardial rubbing may not always be painful, and, in fact, may not be the source of pain. When effusion is present pain may be troublesome, showing that it is due to internal disturbance of the heart.

Pericarditis causes but little fever unless it is a complication of some feverish process. More or less dyspnea and cardiac anxiety occur and become marked if much effusion takes place. The heart sounds will become

muffled when there is much effusion, and the pulse becomes weak and rapid on the least exertion. If there is much pressure on the heart there is dyspnea and even cyanosis, and the condition is then serious. If the inflammation is prolonged, a myocarditis may develop and the heart may become dilated from the weakening of the muscles. When an enlarged cardiac dulness with cardiac dyspnea is first noted during the course of a chronic disease it is often difficult to diagnose possible fluid in the pericardial cavity from a simple enlarged dilated heart, hence great care should be taken before it is decided to aspirate supposed liquid from the pericardium.

The prognosis of pericarditis as a complication of acute diseases is generally pretty good unless other conditions render the prognosis serious. The pericarditis that sometimes occurs in the latter stages of chronic nephritis is serious and often causes a fatal termination. When there is considerable exudate around the heart there is danger from sudden syncope at any time.

The objects of treatment are: to remove the cause, if possible; to shorten the inflammation, and to prevent or get rid of the exudate. The indications to meet, then, are to treat the cause if we know it, to give as much rest to the heart as possible, to stop pain, to allow no reflex irritation to come from the gastrointestinal canal, and later to remove the effusion.

To meet the first indication we should treat the cause, whatever it may be, as we would if the pericarditis were not present. This is especially true of rheumatism with the precaution of not giving salicylic acid in too large doses or too long, when there is inflammation either of the endocardium or pericardium.

Absolute rest mentally and physically is an imperative necessity, as everything that increases the number of the heart beats increases the irritation of the pericardium. Enough morphin should be given hypodermatically to stop whatever pain is present, and pericardial pain generally requires but small doses. In the beginning of the inflammation an ice bag placed directly over the heart often seems to inhibit the inflammation and to prevent an effusion. As soon as an effusion has taken place the ice bag should be removed. If the heart is rapid, and it has not been injured by a long-continued feverish process which has caused a myocarditis, and if there is no renal or arteriosclerotic reason that digitalis should not be given, it certainly, in small doses, is advisable in pericarditis. If, for instance, a heart is pulsating 100 times a minute and small doses of digitalis reduce this to 80, this means 20 beats less per minute, or 1,200 less in an hour, and 28,800 less in twenty-four hours, which means that much less irritation to the inflamed pericardial membrane.

There is not very frequently sufficient effusion in the pericardial cavity to require paracentesis, but if there is much cardiac anxiety and dyspnea, or if the exudate is large in amount and is not quickly absorbed, aspiration should be done, of course with the greatest possible care. The best point for puncture has not been agreed on by all authorities, some advising that the needle be introduced between the third and fourth ribs at the left margin of the sternum, while Rotch prefers the right fifth interspace, and others advise doing paracentesis exactly in the region of the normal apex beat, the heart, of course, having been displaced by the fluid. Dr. Samuel West, in the *British Medical Journal*, Oct. 26, 1907, gives the safest advice, as far as the heart is concerned, for the withdrawal of pericardial fluid. He advises that the needle be inserted "between the extreme limit of the cardiac dulness in the axilla and the place where the apex is determined to be." It is obvious that the heart itself could not be injured by following such advice. The objection to this position is that the pleural cavity may be punctured and fluid from the pericardium might then be allowed to enter this cavity. West says he has seen such accidents occur, but has never seen any serious results from it.

The patient should be in a recumbent or at least semi-recumbent position, this position favoring the sinking of the heavy heart away from the chest wall. The fluid should be drawn very slowly and the pulse carefully watched. A rapid evacuation of the fluid might cause collapse. If the fluid is found to be purulent it must at once be evacuated and a decision then made as to the best surgical methods to be employed.

If death seems imminent from the laboring heart during the course of pericarditis or any other acute cardiac condition, venesection may be not only justifiable but life-saving.

If the amount of pericardial fluid believed by clinical symptoms and signs not to be purulent does not diminish day by day, various methods are used to promote its absorption. Diuretics or diaphoretics are of but little use, and especially the latter are inadvisable on account of their prostrating effect on the patient. Daily saline purgatives, not too active, with a diminution of the amount of liquid allowed the patient will generally cause the fluid to be absorbed. At this stage blisters over the heart, small in size and perhaps several in number, seem also to promote absorption. If these methods do not promote absorption and the heart's action is good, either with or without digitalis, the fluid should be removed by aspiration. If an intermittent fever is present without assignable cause, the presence of pus in the pericardium must be suspected and the aspirating needle inserted for diagnostic purposes as well as for the removal of the fluid.

If after most of the fluid has been absorbed and the cardiac dulness has returned to nearly normal but still is larger than it should be, of if friction sounds are heard, or in conditions of dry pericarditis, it is advisable to give small doses of an iodid three times a day for a considerable period. The best preparation is the sodium iodid in a dose of 0.20 gram (3 grains) three times a day, after meals. It is also advisable to paint the precordium with the tincture of iodin once a day for several days, not allowing the skin to become hardened or blistered. Later, rubbing in a small amount of the ointment of potassium iodid is beneficial.

As soon as the acute inflammation is over general tonics and iron in some form, in small amounts, are needed, and as the condition improves the local resolution and absorption are completed. Of course during the acute stage of pericarditis, and for a considerable time after, the bulk of food or nutrition taken should be limited and gastrointestinal indigestion prevented. In other words, it may be found that milk, even during the acute stage, is not a good diet, if it causes gastric flatulence, a coated tongue, and constipation. The kind of diet the patient should receive depends on the amount of temperature.

After the patient is apparently well great care should be taken to prevent any exertion that could cause heart strain, since, as previously stated, the heart muscle is weakened by a pericarditis as well as perhaps by the cause of the pericarditis.

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THE PREVENTION OF COMPRESSED AIR ILLNESS.

Modern engineering activities have made extensive tunneling operations much more common than they formerly were, and submarine tasks by divers and caisson workers multiply in frequency, with the consequence that the serious effects that may follow exposure to high atmospheric pressure are being observed more and more commonly. The very practical question of the best means of avoiding these harmful results is one that interests both physicians and contractors, and the importance of this subject for naval work is such that the British Admiralty appointed a committee on deep diving to investigate the problems arising in this connection. Extensive experimental studies were made and correlated with practical experience, with interesting and important results.[1]

Since the experiments of Paul Bert in 1878 the principal fact concerning the genesis of compressed-air illness or caisson disease has been understood; namely, that it depends on the taking up by the blood and body fluids of large quantities of nitrogen under pressure, and the subsequent liberation of this gas when the abnormal pressure is removed, just as gas escapes from carbonated water when the bottle containing it is uncorked. The nitrogen is taken up not only by the blood, but also by every fluid and cell in the body, especially the fat tissue which Vernon found to absorb six times as much as the blood, a fact which becomes of considerable importance in calculating the time necessary to decompress with safety men who have been working in compressed air. As Paul Bert first pointed out, by very slow decompression all danger of caisson disease can be avoided, and later investigators established as a rule that in decompression a period of twenty minutes should be allowed for each atmosphere. The question of the amount of time required for safe decompression becomes a matter of much moment when men are working under the pressure of several atmospheres in short shifts, for it may require more time for this purpose than they can be engaged in active work, and in deep sea diving for a man to be obliged to spend two or more hours under water while returning from a pressure of six atmospheres or 165 feet, is certainly a severe hardship.

1. The Prevention of Compressed Air Illness, Boycott, Damant and Haldane, Jour. of Hygiene, 1908, viii, 342.

It was in connection with this latter question that the English committee made its extensive studies. It was found that the rate of saturation of the body with nitrogen, under pressure, is much more rapid at first, the amount taken up decreasing rapidly as saturation is approached more and more closely; conversely, desaturation proceeds much more rapidly at first than it does later. The element of time, therefore, enters greatly into the danger of exposure to high pressures, and there is little danger from rapid decompression after exposures lasting but an hour or so. Longer exposures require longer decompression time even when the pressure has been the same.

It is not desirable, however, that the decompression should occur at a uniform rate, as has been usually practiced and recommended. Much better results can be obtained by reducing the temperature rapidly at first to about half the pressure at which saturation took place, and then reducing the rate of decompression gradually toward the end. Uniform decompression has the serious disadvantage of keeping the subject exposed for an unnecessarily long time at a pressure near the maximum, thus increasing the amount of gas to be removed later, while toward the end the rate of decompression is dangerously fast, for the curve of removal of gas is not a straight line since the gas escapes much more rapidly at first than later. Tables have been carefully worked out showing the time necessary for each stage of decompression after various periods of exposure up to ninety pounds in excess of atmospheric pressure; and there is a decided gain in time as well as safety when the decompression is rapid at first and slow in the later stages.

In deep sea diving it is desirable that the time spent at high pressure should be as short as possible; consequently the descent to the maximum depth should be made as quickly as practicable, the time spent at this pressure should never be long, and the decompression should be accomplished by having the diver ascend rapidly to one-half the pressure, and more and more slowly after this point. If a diver were to stay at a depth of 213 feet, where the pressure is 7.5 atmospheres, until his tissues were saturated with nitrogen, the time required for safe decompression would be about five hours; hence it is evident that exposure to great depths can not be long maintained without great danger. Another danger of exposure to great pressures lies in the fact that the amount of oxygen taken up by the body may be so great as to cause oxygen poisoning. By taking these various facts into consideration, abolishing the usual slow descent, making the first part of the ascent rapid and the last part slow, it has been found possible to combine greater safety with a distinct saving of time under water for a given period of working time on the bottom.

Numerous experiments with goats compressed in a chamber devised for experimental purposes, gave oppor-

tunity for observations on the pathologic anatomy of caisson disease. Bubbles were found most abundant in the blood, fat, and synovial fluid, and not uncommonly in the spinal cord, but they were rarely found in the other solid tissues. When death occurs the cause is nearly always pulmonary air embolism, while paralysis is the result of blockage of the vessels in the spinal cord by air. Only in the fat tissue and in the spinal cord were definite evidences of necrosis and tissue softening found, the reason for this localization presumably being the large amount of gas that is taken up by fatty substances. The characteristic symptom, the "bends," has been commonly ascribed to spinal cord lesions, but the investigators mentioned could not find evidence in support of this view; they believe that escape of bubbles into the synovial fluids may be the cause of the condition.

HOW SUPERSTITIONS ARE REINFORCED.

Every now and then a story appears in the newspapers that is apparently a striking confirmation of some one or other of the old superstitions that still cling to mankind. For the ordinary reader it is scarcely more than an out-of-the-way story. For those who have certain tendencies to believe superstitions and to be affected by them, such stories are often "confirmations strong as Holy Writ" of their peculiar notions. During the past few months a story regarding the number thirteen has been going the rounds with striking effect. It has been contradicted, categorically, but then contradictions never travel so fast or so far as the original story. The incident that forms the basis of the tale is taken from the biography of Sir John Millais, the English painter, and first appeared in the columns of *M. A. P.*, Mr. T. P. O'Connor's London weekly, whose enigmatic title is translated into words as "Mostly About People." According to the biographer, one day at dinner at Millais' house it was discovered that there were thirteen at table and one of the women diners was much disturbed. In order to reassure her, Mr. Matthew Arnold is said to have remarked: "Now the idea is that whoever leaves the table first will die within a year. With the permission of the ladies, then, we shall cheat fate for once. I and these fine strong lads," pointing to two husky young fellows, "will all rise together and I think that our united constitutions will be able to stand the assault of the reaper." According to the sequel of the story as told, Matthew Arnold died six months later, one of the young fellows committed suicide about the same time, and just within the year the third of the trio was drowned on the steamer *Quetta* off the coast of New Guinea.

Millais' biographer adds: "And now what shall be said of these things. The facts are exactly as I have stated them and are only too well-known to many now living." Of course, even if the facts were as stated it would be nothing but a coincidence; and we might expect that a serious writer of biography would be very careful about his facts. According to a correspondent of the London *Spectator*,[1] however, the assertions are all wrong. He says: "The party is said to have taken place in August, 1885. Accordingly Arnold must have died in March, 1886, and the *Quetta* must have gone down about the same time. Everyone knows that Matthew Arnold died in April, 1888, and I have just come across a reference to the wreck of the *Quetta*, by one who lost several relatives in that ill-fated vessel, which gives the year of the wreck as 1890. What could a serious biographer have been about when he allowed his memory to trick him into penning such a piece of circumstantial nonsense? In view of these glaring discrepancies it is allowable to discredit the whole story, however it may have formed itself in the writer's imagination. Arnold knew from about 1868 that his life was precarious and that his end would probably be very sudden. Is it likely that even in jest he uttered such a speech as is here put into his mouth?"

It has seemed worth while to give some prominence to this contradiction because, while we are inclined to think that the influence of such ridiculous superstitions as the supposed malignity of the number thirteen wherever it occurs is dying out, there are many evidences of a gradual more or less unconscious yielding to the forebodings in this matter that would be amusing if they were not so amazing. How few people who are themselves free from the influence of the superstition are aware that many of the large passenger vessels built in recent years have no state room thirteen. Many modern hotels recently erected have no room number thirteen unless the proprietor was absolutely resolved to combat this foolish superstition. The fact is that some intelligent people feel uncomfortable if asked to take room thirteen. Some are so much disturbed that they would go to the trouble of moving to another hotel rather than to take it. Perhaps the climax of absurdity is that some office buildings of fifteen or more stories now being erected have no thirteenth floor. The reason given by tenants often is that some of their clients may have an objection to visiting the thirteenth floor, and so the manifestation of the superstition grows. At banquets in large hotels where the guests are seated at many tables, as a rule there is no table numbered thirteen. This is true even at medical banquets, and at the dinner to Professor Koch given by the German Medical Society at the Waldorf Astoria in New York not long ago; though there were seventy tables none bore the number thirteen. This was not, of course, because of any objection on the part of the physicians or of the committee. The fact seems to be that the hotel has no placard bearing the number thirteen to put on a table, lest it should scare some diners who might be sensitive in this matter.

It is difficult to understand the reasons for the per-

1. March 7, 1908.

sistence and even the spread of the influence of a superstitious dread of this kind, but it is for physicians to recognize its presence and appreciate how much light it throws on the unreasoning dreads that so often preoccupy patients' minds and make them miserable in spite of reason.

ALCOHOL IN ARMIES.

In closing his paper on "The Feeding of the Soldier," read before the section on navy, army and ambulance of the British Medical Association, Major Blackham said: "The whole question of food values is, so to speak, in the melting pot, and the nation as well as the army may well look to us for a solution of the problem which involves such enormous interests. This is no mere professional or class question, but a matter of supreme economic importance to every nation on the globe."

There can be no doubt that the facilities for doing sound scientific work on such problems as dietetics, the use of alcohol, etc., are much better in organized, disciplined bodies, like the army, than is usually the case for civilian observers, because the conditions are more under control and can be more completely adjusted to solve the particular problem. There is some sort of approach, in fact, to laboratory conditions. For this reason Lt.-Colonel Davies' observations on the influence of alcohol in the service are especially valuable. While he holds it proved that alcohol is both a food and a poison (a food being defined as that which can be oxidized within the body into carbon dioxid and water, so producing heat and energy), he insists that as a food there are so many articles of equal or greater value and free from its objectionable characteristics, that it can be regarded as neither necessary nor advisable from a dietetic point of view. He discusses in this regard the findings of Liebig, Perrin, Anstie, Dupré, Parkes and Wollowicz, and the later pronouncements of Atwater and Benedict and Cushny. He then discusses certain special conditions in which the use of alcohol is held by many to be desirable, particularly from a service standpoint, viz., in extremes of heat and cold, under excessive labor, bodily or mental, and during the peculiar fatigues and exposures incident to war. He concludes that alcohol is unnecessary in any form or in any quantity, under any circumstances that may occur in military affairs. He specifically restricts these observations, however, to the ordinary healthy man, leaving the question of its employment in the treatment of the sick as a separate consideration.

Colonel Davies next inquires whether the use of alcoholic beverages by healthy men, which we have seen to be unnecessary, is, under ordinary circumstances, harmful or harmless, and especially as regards military conditions, whether it is to be encouraged, prohibited, let alone or regulated. In reply he adduces the figures referring to the comparative healthiness of abstainers and non-abstainers, for the sixty years 1841 to 1901, obtained from the two classes of the membership of the United Kingdom Temperance and General Provident Institution. These go to show that the consumption of alcohol, even in moderate quantities (as would naturally be the case with the assurers in this society) tends to diminish the expectation of life. While the figures, he says, are hardly sufficient to be conclusive, their significance is so obvious that they demand attention.

When it comes, however, to a question of applying these considerations to service problems, Colonel Davies frankly admits that "as regards military life in ordinary times of peace, the absolute prohibition of alcoholic drinks altogether is not a practicable procedure. What is to be aimed at and what may be effected, is a regulation of their consumption, and an encouragement of those men who desire to do without them altogether, or who at any rate wish to partake of them in a very moderate amount." Colonel Davies then discusses the canteen question, and, comparing conditions as to alcoholism in the United States army under the present system with those of the armies of Europe, considers that as an economic and reform measure, a controlled canteen is more effective than an attempt at prohibition. He remarks on the continuous increase in the membership of the Royal Army Temperance Association, and cites statistics from 1901 to 1907, in proof of his conclusion that the consumption of alcohol in the British army is steadily diminishing.

THE TUBERCULOSIS CONGRESS.

The interest in the International Congress on Tuberculosis, to meet in Washington, September 21 to October 12, seems to be warranted by the programs of papers to be read before the sections. It is interesting to observe that the titles of the papers indicate that in addition to the valuable contributions of foreign delegates there will be a good representation of American experience and opinion. It should be noted that the section work of the congress is confined to the second week, September 28 to October 3. The first and third weeks will be occupied with the exhibition of objects of interest and educational value in respect to the tuberculosis problem, and with demonstrations and clinics and lectures by eminent foreigners. The possibilities of instruction and profit from these two weeks for the average visitor are not surpassed by the benefit to be derived from listening to the papers before the sections. There will be a tuberculosis exhibition, which is planned to surpass anything of the sort ever attempted. The methods of combating the disease employed in foreign countries and the devices for arousing interest and educating the public will be exhibited. A number of prizes have been offered, five being of $1,000 each and

one of $1,500, offered by the Smithsonian Institution. The latter prize is for the best treatise on "The Relation of Atmospheric Air to Tuberculosis."

During the first week of the congress the meeting of the International Conference on Tuberculosis occurs in Philadelphia, at which a number of valuable papers will be read. The program for this meeting was given in last week's issue, page 684. It is also intended to hold meetings in other cities. By these conferences the work of the congress will be considerably extended and its influence will be brought to bear on other communities besides the capital city.[1]

This congress should have a large attendance of persons representing the whole country. It is primarily a medical affair and the physician will be expected to lead here as he must lead in all efforts at the restriction of disease. In addition, however, the eradication of tuberculosis is pre-eminently a sociologic problem. The disease has its roots in the economic evils resulting from a civilization which has reached its high vantage ground too often at the cost of health. Its prevention is not merely medical; it must involve a wise philanthropy as well. Therefore, not only the physician, but the charity worker, the manufacturer, the labor leader and the statesman, may be expected at this congress. From the impressions received at the International Congress on Tuberculosis we may expect a new enthusiasm and a unity of effort that will greatly advance the anti-tuberculosis crusade not only in this, but in every country.

SOILED CURRENCY.

The subject of "tainted money" has already been noticed editorially in THE JOURNAL[2] and the possible dangers to health pointed out. That these dangers are obvious needs no saying. The very appearance of much of the currency in circulation suggests contamination and disease. The question of how far the danger is a real one, however, has not hitherto been studied to any great extent by accurate experimental methods, and possibly too much has been taken for granted from mere appearances alone. That this would seem to be the case is rendered probable by a recent investigation reported in the *Popular Science Monthly*[3] by Mr. Warren W. Hilditch of the Sheffield Laboratory of Bacteriology and Hygiene, Yale University. He made a careful study of twenty-four specimens of the dirtiest paper money he could procure from various sources—ticket offices, banks, drug stores and individuals—and examined them with special reference to the bacterial flora. Each bill was carefully washed with sterile salt solution under conditions to avoid air contamination, and the final sediment, after centrifugation, etc., was examined microscopically, cultures made, and inoculation experiments performed. All inoculations gave negative results, and, excepting staphylococci, chiefly *S. albus*, few bacteria were found. The average number found for the twenty-four bills was 142,000, and there seemed to be no connection between the amount of dirt and the number of bacteria present—the cleanest looking bill having next to the highest count (405,000), while the bill that looked the dirtiest had but 38,000. When a bill has been in circulation for some time, he says, and its peculiar glaze has worn off, it collects bacteria readily, independently of the presence of dirt or grease. From his observations, it would seem that the bacteria of paper money are non-virulent and mostly of the air forms. He asks whether the lack of virulence may be due to drying, the bills having a peculiarly dry feeling, or to some antiseptic action of the ink used in the printing, but he did not attempt to investigate this question, confining his attention to the search for pathogenic forms. He quotes, also, Dr. Park of the research laboratory of the board of health of New York City and Dr. Doty, the health officer of the port, and the treasurer of the United States, all of whom give their opinion that the transmission of disease by currency must be rare, Dr. Park stating that he has never found any evidence of the actual transfer of disease through money, though he did find bills capable of carrying living tubercle and diphtheria bacteria for some days. Statements have been made in the secular press of the conveyance of serious disease by paper money, but they lack positive scientific verification. Naturally such proof is impossible in most cases, and this should be taken into consideration. We have even seen a statement that a bank teller who had contracted leprosy was still employed in his occupation, dealing out money. While this may be true, and it is a rather appalling fact, if so, the danger still may be less real than apparent, on account of the deficient viability of the special microbe outside of the animal body. That there is a real danger from soiled money Mr. Hilditch does not deny, but he thinks that the absence of virulent disease germs found by him indicates that it is at least not a common means of the transmission of disease. If it were, those most exposed in handling money, such as bank clerks, would bear evidence of it, at least more frequently than seems to be the case.

HUMAN LIFE A CHEAP COMMODITY.

The carelessness and indifference to human life shown in the repeated occurrence of railroad and car accidents, in reckless driving, particularly of automobiles, in the public distribution of samples of "headache powders" and other poisonous remedies, and in other ways, was signally displayed this week in Chicago. A live wire was left dangling in the street for more than two days after proper warning had been given. The natural result of this criminal negligence is one little girl killed, and her five-year-old brother dangerously burned. Had the ultimate purpose of a coroner's inquest been at

1. A large group of foreign delegates will go to Baltimore on October 5, when a public meeting will be held and an address will be given by Professor Landouzy of Paris. There will be similar meetings in Boston on October 6 and 7, when Dr. R. W. Philip, of Edinburgh, and Prof. Dr. C. H. H. Spronck, of Utrecht, will deliver public addresses. In New York, on October 8 and 9, Dr. N. P. Tendeloo, of Leyden, and Dr. Andres Martinez Vargas, of Barcelona, will give special lectures under the auspices of the Academy of Medicine.
2. April 18, 1908, p. 1269
3. July, 1908.

tained, instead of a verdict of accidental death, there would have been issued a verdict of culpable homicide against the person responsible for the continuance of this death trap from Friday until Monday.

THE TRIUMPH OF SANITATION AT PANAMA.

The redemption of the Panama Canal Zone from preventable diseases receives official confirmation in the report to President Roosevelt of the special commission appointed last April to investigate the work accomplished. The importance of the hygienic problem involved is emphasized by the commission in reviewing the difficulties under which the French labored in their efforts to construct the canal. The report says:

"The terrible scourge of yellow fever against which the French struggled in vain, the filthy and pest-breeding state of the principal Panama towns, the rough labor camps and other pioneer hardships of the first two eras have been eliminated through the brilliant and persistent activity of the department of sanitation, the department of municipal engineering and the building department. To-day we find yellow fever driven from the isthmus, malaria and pneumonia greatly reduced and a high average of health established. Although the government's immediate object on the isthmus is to dig the canal and to provide living quarters for a temporary enterprise, it has, in fact, created comfortable homes and well-organized social communities for its working force."

Modern civilization furnishes no better example than this of the possible victory over pestilence and disease, when the warfare is carried on in the light of modern scientific knowledge. The building of the Panama Canal and the sanitary record of the Japanese in their war with Russia are the two great object lessons of recent years, demonstrating that men can neither work nor fight to the best advantage unless protected from infectious and preventable diseases. The civilized nation which will hereafter put an army in the field or undertake a great engineering problem without first preparing the way by proper and adequate sanitary engineering and equipment will be regarded by the other nations as quite as foolish as a government which would build a vast fleet of modern warships and then arm them with the muzzle loading ordnance of one hundred years ago. An epidemic of typhoid fever in a military camp should be considered a greater disgrace to an army than a defeat in battle, since defeat may come in spite of the greatest exertions and the highest wisdom, while typhoid and yellow fever would be the result of ignorance or disregard of well known laws of prevention. All nations will profit by the sanitary lesson of the Panama Canal.

Anesthesia in the Sixteenth Century.—Stuart McGuire (*Virginia Medical Semi-Monthly*, July 24, 1908, p. 186) quotes the following from Dubartas (A. D. 1592):

> Even as a surgeon minding oft to cut
> Some cureless limb, before in use he puts
> His violent engines in the victim's member,
> Bringeth his patient in a senseless slumber;
> And griefless then, guided by use and art,
> To save the whole, saws off the infested part.

Medical News

DISTRICT OF COLUMBIA.

Health Report.—According to the health and mortality record for the week ended August 15 there were 94 deaths, of which 50 were white and 44 colored. Of the births 103 were white and 68 colored. During the week 33 cases of typhoid fever were reported, an increase of 8 over the previous week.

Annex for Garfield Hospital.—Plans have been prepared for the erection of a new addition to Garfield Hospital, the gift of Dr. Loren B. T. Johnson as a memorial to his wife. The building cost about $35,000, will have a capacity of 60 beds and will be for the exclusive treatment of women and children.

To Register Consumptives.—The health officer is preparing to begin the enforcement of the new law providing for the registration of all cases of tuberculosis. Under the law physicians must report every case within one week after the disease is recognized. Provision is made for the free examination of sputum.

Births Not Reported.—An examination of the records of the health department by the census office shows that only 75 per cent. of the births in the District during 1907 were reported. The health office will endeavor to fix the responsibility for failure to record the remaining births, and it is probable that prosecutions will result.

Personal.—Dr. Joseph Taber Johnson has recovered from his recent serious illness.——Dr. M. G. Motter, chief sanitary inspector of the District, has resigned from the health department to join with the Public Health and Marine-Hospital Service.——Dr. Harvey W. Wiley, chief of the division of chemistry, Department of Agriculture, has been appointed an honorary president of the First International Congress for the Repression of Adulteration of Alimentary and Pharmaceutical Products.

FLORIDA.

Personal.—Dr. Joseph L. Romero has been appointed health officer of Jacksonville.——Dr. Clarence Hutchinson, Pensacola, has received the degree of M.R.C.S. England.——Dr. Warren E. Anderson, Pensacola, agent of the State Board of Health, has gone to Atlanta to receive treatment at the Pasteur Institute.

A Warning.—Dr. Howard Steele Holloway, Jacksonville, writes warning against one H. F. Alphin, who purports to represent the L. D. Johns Company of New York, and who by specious promises and misrepresentation is succeeding in selling stock to doctors. The company he claims to represent says that it knows nothing of the man.

ILLINOIS.

Personal.—Dr. George W. Mitchell, first assistant physician at the Illinois General Insane Hospital, South Bartonville, has started for a year of rest and study in Africa and Europe.——Dr. Charles E. Crawford, Rockford, has been re-elected grand medical adviser to the Sons of St. George.

Hospital Contract Let.—The contract for the building for the new hospital for tuberculosis on the grounds of the Cook County Hospital has been awarded for $222,900 to the lowest bidder. The new building will be five stories in height, 162 feet long, with three wings, each 128 feet long and will accommodate 320 patients.

Want Higher Standards.—At the August meeting of the Galesburg Medical Society resolutions were adopted that the newspapers of the city be requested to refrain from mentioning names of physicians in connection with their professional work; and, furthermore, that a copy of the resolutions, together with a petition, to be signed by the physicians, be presented to the newspapers for publication.

Chicago.

Contagious Diseases.—The cases of contagious diseases reported during the week ended August 21 numbered 187, of which 60 were diphtheria, 41 tuberculosis, 38 scarlet fever, 20 typhoid fever, 8 whooping-cough, 16 measles, 2 chickenpox, and 2 minor diseases.

Personal.—Dr. and Mrs. John B. Murphy will sail from Europe for home on September 12.——Dr. Antonio Lagorio is taking treatment at his own Pasteur Institute on account of infection from a wound from the bone of a rabbit which had been inoculated with rabies.

Tuberculin Test.—The department of health has sent out notices to physicians, worded as follows: "The department

of health suggests: Why not use tuberculin and diagnose your case of consumption *now*? Why wait until there is no hope? Which policy is best for your patient—for the community—for you? The department will give you the tuberculin."

Deaths of the Week.—During the week ended August 21, 575 deaths were reported to the bureau of vital statistics, 45 fewer than the preceding week and 109 fewer than the corresponding week in 1907. Chief among death causes were: Acute intestinal diseases, 196; consumption, 53; violence (including suicide), 35; nephritis and heart diseases, each 34; cancer, 32, and pneumonia, 27.

INDIANA.

Health Circular.—The Indiana State Board of Health has issued a letter to the people entitled "Why Not Protect the Health of School Children?" In this the importance of pure air and proper heating and ventilation is urged, the evils of air starvation detailed, and the lighting and air supply of schoolrooms considered—all these with the idea, first, of preserving the health of the school children, and, second, of saving the money of the state and increasing the general wellbeing and happiness.

July Disease and Death.—During the past month the order of disease prevalence was as follows: Diarrhea, cholera morbus, dysentery, cholera infantum, tonsillitis, rheumatism, typhoid fever, bronchitis, intermittent and remittent fever, inflammation of the bowels, whooping-cough, scarlet fever, diphtheria, measles, smallpox, typhomalarial fever, pleurisy, pneumonia, cerebrospinal meningitis, influenza, erysipelas, puerperal fever and chickenpox. There were reported 65 cases of smallpox in 13 counties, with no deaths. In the corresponding month last year there were 74 cases in 21 counties with no deaths. Tuberculosis caused 339 deaths and pneumonia 60 deaths. In the corresponding month of last year pneumonia caused 84 deaths. Typhoid fever caused 58 deaths. There were 207 cases reported in 58 counties. In the corresponding month last year there were 312 cases in 64 counties, with 53 deaths. Violence caused 207 deaths, of which 10 were murders, 26 suicides, and 171 accidents.

Personal.—Dr. Edward J. McOscar, Fort Wayne, has returned from Germany.——Dr. Benjamin H. Cook, Anderson, who sued the Indiana Union Traction Company for $20,000 damages, has been awarded $700 by the jury.——Dr. Floyd B. McBride, assistant surgeon at the Marion Soldiers' Home, has resigned, and will be succeeded by Dr. Lloyd B. Campbell.——Dr. Jay D. Nusbaum, Auburn, has been appointed surgeon to the Toledo & Chicago Interurban Railway.——Dr. Harry C. Sharp, surgeon at the Indiana Reformatory, Jeffersonville, has resigned, to take effect October 1.——Dr. Henry G. Linn, Rushville, has been taken to the East Haven Hospital, Richmond, for treatment for cholelithiasis.

IOWA.

Bequest.—By the will of the late Senator Allison $1,000 is bequeathed to the Finley Hospital, Dubuque.

Hospital Staff Elects Officers.—The medical staff of Cottage Hospital, Creston, has elected the following officers: President, Dr. Frank E. Sampson; vice-president, Dr. J. W. Lauder; and secretary, Dr. Charles A. Beattle.

Communicable Diseases.—The epidemic of smallpox at Mason City is said to have been stamped out, the last patient having been discharged from the detention hospital.—Rockwell reports an epidemic of typhoid fever.

Pollution of Waterways.—At the annual meeting of the State Board of Health in July, resolutions were adopted that a committee of five be appointed to draft a statute to be presented to the next legislature, requiring that all cities, towns or communities purify their sewage so as to render the effluent harmless.

Society Meeting.—The Austin-Flint-Cedar Valley Medical Association, at its sixth annual meeting, held in Clear Lake, elected the following officers: President, Dr. Ernest J. Waddey, Waterloo; vice-president, Dr. Michael J. Kenefick, Algona; secretary and treasurer, Dr. Claude F. Osborn, Hampton; and censor, Dr. Henry H. Clark, McGregor. The association will meet in Hampton next year.

Decision Against Physicians.—In the damage suit of Mrs. Annie Arp for $45,000 against Drs. Alphonse L. Hageboeck, Julius T. Haller and J. H. Meyhaus, Davenport, in which the allegation was made that the death of the plaintiff's husband was caused by leaving a sponge in his body after an operation for appendicitis, and in which the jury twice disagreed, a settlement is said to have been arrived at by which Mrs. Arp receives $4,500.

Senior Students Get Diplomas.—The three students of Drake University Medical Department who started mandamus proceedings to compel the authorities to grant them diplomas are to receive them. These students had taken a two years' course in an osteopathic college and two years in the medical college, and the president of the latter refused to give them certificates. The state board, however, is said to have made a special ruling in their favor.

Personal.—Dr. Alexander M. Linn, Des Moines, has been elected president of the State Board of Health, vice Dr. Joseph H. Sams, Clarion.——Dr. A. P. Hanchett, Council Bluffs, has been elected president of the State Board of Medical Examiners.——Dr. J. B. B. Hudson has been appointed first assistant state bacteriologist.——Dr. Robert Evans, Fort Dodge, returned from Europe August 18.——Dr. Lawrence W. Littig, Iowa City, who has been seriously ill with blood poisoning, is reported convalescent.——Dr. Matthew U. Cheshire, Marshalltown, has been appointed surgeon to the Marshalltown Light, Power and Railway Company.——Dr. Gabriel G. Bickley, Waterloo, is reported to be critically ill with pneumonia.——Dr. Andros Guede, Des Moines, has returned from Vienna.

KANSAS.

Against Flies.—The department of food and drugs of the Kansas State Board of Health has issued a leaflet entitled "Swat the Fly."

Postgraduate Course.—The faculty of the Kansas Medical College of Topeka has decided to open a postgraduate or clinical course during the week preceding the opening of the college term in September. This course is especially planned for the benefit of the alumni of the school.

Personal.—Dr. Henry M. Lankford, superintendent of Evergreen Place Hospital, Leavenworth, Kan., has been visiting his old home in Princess Anne, Md.——Dr. Edith S. Haigh has moved from Iola to Madison, Wis.——Dr. Samuel J. Crumbine, Topeka, chief food inspector of the state, has been commissioned federal food inspector by the Secretary of Agriculture.

KENTUCKY.

Verdict for Physician.—In the damage suit of Mrs. Sarah Daugherty, Elizabethtown, against Dr. Argus D. Willmoth, Louisville, in which it was alleged that the defendant had left in the body of the plaintiff a sponge and other foreign matter, the jury brought in a verdict for the defendant.

Sanitarium Incorporated.—Dr. Milton Board, Hopkinsville, member of the State Board of Control, has filed articles of incorporation for a sanitarium with capital stock of $10,000. The stockholders are Drs. Milton Board, Arthur T. McCormick, Bowling Green; James T. Windell, Louisville; Joseph McWilliams and Charles H. Moorman.

New City Hospital Planned.—The committee appointed to consider plans for the new City Hospital at Louisville has reported in favor of a sectional structure consisting of six pavilions, each containing two wards, with accommodations for 450 patients. Concrete is recommended as the material of construction, and the estimated cost of the structure is from $600,000 to $700,000.

Graduation Exercises.—At the commencement exercises of the Medical Department of the University of Louisville a class of 99 received diplomas. The salutatory was delivered by Dr. Thomas C. Maguire. Dr. Joseph M. Boyden presented the graduates to the chancellor of the university, Dr. J. C. Willis, who conferred the degrees.——At the fifty-eighth annual commencement exercises of the Kentucky School of Medicine a class of 47 was graduated.——At the annual commencement exercises of the Louisville and Hospital Medical College a class of 102 received diplomas. Rev. W. Francis Irwin delivered the doctorate address.

Personal.—Dr. J. M. Mathews has returned to the city after a six weeks' visit to Atlantic City, N. J., and White Sulphur Springs, W. Va.——Dr. W. L. Nuttall, Newcastle, has been appointed superintendent of the Feeble-Minded Institute, to succeed Dr. Alexander Bailey of Bailey's Mills.——Dr. Daniel J. Healey has been appointed pathologist to the Eastern Kentucky Asylum, and Dr. Louise Healey, his wife, has been appointed third assistant physician of the same institution.——Dr. Florence Meder has been transferred to the Central Kentucky Asylum at Lakeland, as third assistant physician.——In recognition of his fifty-two years of practice in Kentucky, Dr. Davis J. Foster, Paducah, has been presented

with a gold-headed umbrella by the physicians of the city.——Dr. Frank Boyd, Paducah, has been appointed surgeon general of the state guard.——Dr. William T. Merchant, Louisville, has been appointed city physician for the indigent colored population.——Dr. B. Frank Eckman, Covington, was painfully injured in a collision between his automobile and a railway train, July 29.——Dr. Stanislaus Brzozowski has been appointed superintendent of the Louisville Eruptive Hospital, vice Dr. J. L. Whittenberg.——Dr. Joseph M. Stuart has succeeded the late Dr. James P. Heavrin as president of the board of health of Owensboro.

MARYLAND.

Homicides.—Since 1885 there have been 441 homicides in Baltimore, an average of 18 per annum.

Baltimore Personal.—Dr. Robert Hoffmann has returned from Germany.——Dr. James E. Harris sailed for Germany August 19.

Health Bulletins.—The last of the weekly health bulletins of the Medical and Chirurgical Faculty of Maryland were on "Ptomain Poisoning" and "Baths."

New Emergency Hospital.—The Emergency Hospital building commission at Annapolis has asked for bids for the new hospital in that city, to cost about $25,000, the amount appropriated by the state.

Improvements at Quarantine.—Extensive improvements are being made at the Baltimore quarantine by Dr. Thomas L. Richardson, assistant health commissioner. Among these are the installation of a new water system, a gas plant and baths.

July Deaths in Baltimore.—Dr. J. F. H. Gorsuch, health officer of Baltimore County, reports that during July there were 186 deaths, among which were 16 from tuberculosis, 15 from accident, 8 from cerebral meningitis, 7 from typhoid fever, and 3 from suicide.

Protest Against Division of Authority.—Dr. E. N. Brush of the Sheppard and Enoch Pratt Hospital, and Dr. Charles F. Bevan, dean of the College of Physicians and Surgeons, Baltimore, have entered a protest against the proposed division of authority at the Springfield Asylum for the Insane. Dr. Brush says: "The conduct of a hospital for the insane under dual management is universally condemned by those whose experience and knowledge entitle them to express an opinion. Such an arrangement is bound to result in friction and in disputes as to authority or responsibility, and this condition of affairs inevitably results in harm to the patients." The dual management of the asylum is believed to be advocated on the ground of economy.

MASSACHUSETTS.

Contribution to Hospital Fund.—The members of the Boston Curb Exchange have contributed $1,000 to the fund of the Boston Floating Hospital.

Typhoid at Newburyport.—Dr. William H. Coon of the State Board of Health has been investigating the numerous cases of typhoid at Newburyport. The milk and water supplies are to be looked into.

Personal.—Dr. A. F. Story, Natick, who has been critically ill for the past six weeks, is reported to be improving.——Dr. Herman Cooper, Amesbury, who has been seriously ill with cardiac involvement, is improving.——Dr. Joseph H. Pratt, Boston, has returned home from Europe.

Salem Health Crusade.—The Salem board of health has inaugurated a health crusade and has issued a rule requiring all meats, poultry, fish, dates, figs, berries and shelled nuts, when exposed for sale in the open air, be covered so as to exclude flies and dust. It is understood that one of the main objects is to regulate the exposure of fish for sale.

MICHIGAN.

Issue of Health Bulletin.—The State Department of Health of Michigan has issued for its July and September bulletin a pamphlet on the summer diarrheas of infancy and their restriction, which deals with such topics as the care and dress of infants, fresh air, foods and drugs, and "patent medicines."

July Vital Statistics.—During July there were reported in the state 151 cases of measles, 110 of typhoid fever, 96 of scarlet fever, 78 of smallpox, 75 of whooping-cough, 69 of diphtheria, 52 of pneumonia, and 32 of meningitis. In all these cases of dangerous communicable diseases the number of cases reported was markedly lower than the average from 1904 to 1906.

Tuberculosis Notes.—The Grand Rapids Tuberculosis Sanatorium is now filled to its entire capacity of 25. The Anti-Tuberculosis Society of Grand Rapids is to furnish free clinics, which will be held from 12 to 1 o'clock either three or six times a week. Drs. Collins H. Johnson, Ralph H. Spencer, Alden H. Williams, Thomas M. Koon, J. D. Hastie, Abel J. Baker, and Henry J. Vandenberg make up the attending staff. ——On July 21 the Houghton County Anti-Tuberculosis Society celebrated Blue Star Day, the wearing of the star meaning that the individual had helped in the fight against tuberculosis.——The board of health of Holland has passed an ordinance prohibiting expectoration on the sidewalk on penalty of a fine from $5 to $50.

MINNESOTA.

Force Paroled.—Dr. Jacob F. Force, Minneapolis, who was convicted of grand larceny and sentenced to serve three and a half years in the penitentiary, is said to have been paroled August 7 by the state pardon board.

Society Meetings.—At the annual meeting of the Wabasha County Medical Society, held in Lake City July 9, the following officers were elected: Dr. Lawrence C. Ingram, Zumbro Falls, president; Dr. Charles J. McGuire, Minneiska, vice-president; Dr. William F. Wilson, Lake City, secretary-treasurer; Drs. Emery H. Bayley, Lake City, J. Thomas Asbury, Wabasha, and Ernest A. French, Plainview, censors; Dr. William T. Adams, Elgin, delegate to the State Medical Society, and Dr. William J. Cochrane, Lake City, alternate.——At the annual meeting of Freeborn County Medical Society, held in Albert Lea, Dr. Gustav W. Barck, Albert Lea, was elected president; Dr. John P. Freeman, Glenville, vice-president; Dr. Olaf E. Rodli, Albert Lea, secretary, and Dr. John P. von Berg, Albert Lea, treasurer.——At the annual meeting of the Southern Minnesota Medical Association, held in Owatonna, August 6, the following officers were elected: President, Dr. Osmon F. Way, Claremont; first vice-president, Dr. William S. Wood, Blooming Prairie; second vice-president, Dr. Hugh F. McGaughey, Winona; secretary-treasurer, Dr. William T. Adams, Elgin. Winona was selected as meeting place for 1909.

MISSISSIPPI.

Smallpox.—Smallpox in virulent form is said to be epidemic in the Franklin neighborhood, Holmes County, where it has been necessary to close a negro school.——Three cases of smallpox were discovered in Meridian, July 27.

Graduation Exercises.—At the end of the second term of the Mississippi Medical College, Meridian, a class of 13 was graduated. Dr. William W. Hamilton, president of the college, told of the work the college had accomplished and hoped to accomplish. Dr. Nathan L. Clark, dean of the college, spoke of the history of the college and its outlook; Rev. William Mercer Green delivered the annual address, and Mr. Edwin McMorris awarded the diplomas.

Personal.—Dr. John R. Tackett, Meridian, has resigned as member of the State Board of Health, to take effect immediately.——The office of Dr. J. M. Clarke, Wingate, and contents, were destroyed by fire recently.——Dr. Julius Crisler, Jackson, has resigned his position on the staff of the Mississippi Insane Hospital.

MONTANA.

Society Changes Name.—The Silver Bow County Medical Association on July 24 filed notice of its change of name to Silver Bow County Medical Society.

New Hospital.—The Tong building, Big Hole Basin, has been remodeled by Dr. Sweet and opened as a private hospital, with accommodations for six patients.

Compulsory Vaccination.—The State Board of Health has issued an order providing that each pupil, teacher and janitor in every school in the state shall be vaccinated forthwith.

Personal.—Dr. Thomas J. Murray, Butte, was the guest of honor at a banquet given by the Silver Bow County Medical Association, June 20, in honor of his election as first vice-president of the American Medical Association.——Dr. E. M. Porter, Fort Benton, has been appointed county physician, vice Dr. J. Harris Russell.

Vital Statistics.—The July bulletin of the State Health Board states that during the month there were 473 births, 244 males and 229 females, and 330 deaths. The births were 143 in excess of deaths. The bulletin lays special stress on the mortality of young children and its avoidance, the increase in the number of cases and death from tuberculosis and the necessity of efficient meat and milk inspection.

NEBRASKA.

Licenses Revoked.—The supreme court is said to have affirmed the decision of the district court of Lancaster County, whereby the licenses of Erick Munk and Daniel G. Walker, Lindsay, were revoked. The State Board of Health ordered the licenses revoked on the ground that these men had been guilty of performing criminal operations.

NEW YORK.

Still Wage War Against Noise.—The citizens of Morris Heights have complained about the noise at Fort George, and the board of health has issued an order that all amusement devices be closed at 11 o'clock at night. Since the crusade has been on many more complaints have been received in regard to noises, and it is believed that permanent results will be obtained.

Better Conditions Along the Croton Watershed.—Dr. Thomas Darlington, after a tour of inspection, announces that the conditions along the Croton watershed are much better than they were last year. The work on the sewer system for Katonah which was authorized by the last legislature is progressing so that soon every possible danger to the water supply of New York City will be removed.

Richmond Rid of Mosquitoes.—After five years of experimental work with mosquito extermination, Staten Island is practically free of the pest, and Dr. Doty has to send to other places for insects for experimental work. The number of cases of malaria has decreased proportionately, only three being reported and two of these being off shore. Dr. Doty states that neglect will undo the work that he has accomplished. The filling in will be used with ponds and smaller pockets, and the ditches must be kept open.

Northern New York Health Officials Organize.—The Northern New York Health Officials' Association has been organized with the following officials: President, Dr. J. H. Durham, Cape Vincent; vice-presidents, Drs. Stephen A. Russell, Fulton; Howard A. Bassett, Lowville; and Benjamin W. Severance, Gouverneur; and secretary, Dr. Albert L. Morgan, Dexter. It is to hold quarterly meetings, and all members of boards of health and health officials in its territory are eligible to membership. The objects of the association are educational: That the members may be more thoroughly instructed in sanitary science; that they may acquire a more perfect understanding of the health laws of the state; and that they may gain a clear conception of the powers, duties and responsibilities of health officials, and also such officers as citizens.

New York City.

Personal.—Drs. Darlington and Walter Bensel continue to receive letters threatening their lives if the slaughter of unmuzzled dogs is not stopped.——Dr. Mary Crawford, who is doing ambulance service in Brooklyn, was attacked by an insane man, who attempted to hurl her from the ambulance. Her face was badly lacerated by his finger nails.

To Hold Meeting in New York.—The Playground Association of America will hold its second annual congress in New York during the week of September 7. President Roosevelt is honorary president, and Dr. Luther H. Gulick, president. The meeting will be held in the American Museum of Natural History and the program will include addresses by Governor Hughes, Jacob Riis, Superintendent Maxwell and Dr. Woods Hutchinson.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended August 15, 443 cases of tuberculosis, with 160 deaths; 134 cases of diphtheria, with 11 deaths; 106 cases of measles, with 5 deaths; 87 cases of scarlet fever, with 7 deaths; 124 cases of typhoid fever, with 17 deaths; 18 cases of whooping-cough, with 5 deaths; 5 cases of cerebrospinal meningitis, with 7 deaths; and 9 cases of varicella, a total of 926 cases and 212 deaths.

Death Rate Lowered Again.—The death rate for the week ended August 15 was at the annual rate of 15.74 per 1,000. For the corresponding week of last year it was 20.16 per 1,000. The number of children under 5 years of age who died was 559, against 824 last year. Deaths of children under one year of age were 331, as compared with 478 for the same week last year. This falling off in the death rate is attributed to education due to newspaper publicity, to better food supply, to more rigid inspection, and to the scarcity of money which forbids harmful luxuries in the way of food and overeating.

Protest Against Slaughter of Dogs.—The president and attorney of the Society for the Prevention of Cruelty to Animals registered an emphatic protest at the meeting of the health board against the wholesale slaughter of dogs. It was stated that during July more than 7,000 dogs had been taken up, and only about 2 per cent. had been reclaimed. This meant that about 6,000 dogs had been killed. It was admitted that the board of health had killed over 1,000. Dr. Walter Bensel presented a letter that he had received threatening him with death if the slaughter of unmuzzled and unleashed dogs was not immediately discontinued. It was stated that the policy of the board would not be changed until the Society for the Prevention of Cruelty to Animals could show itself capable of coping with the situation.

Against Tuberculosis.—Hundreds of thousands of transfers, bearing on their backs the following warning against tuberculosis, were distributed through the street-car lines August 23:

CONSUMPTION IN EARLY STAGES CAN BE CURED.

Take your case in time to a good physician or to a dispensary and you may be cured—DO NOT WAIT.

Consumption is "caught" mainly through the spit of consumptives.

Friends of Consumption—Dampness, Dirt, Darkness, Drink.

Enemies of Consumption—Sun, Air, Good Food, Cleanliness.

If you have tuberculosis, do not give it to others by spitting; even if you have not, set a good example by refraining from a habit always dirty and often dangerous.

THE COMMITTEE ON THE PREVENTION OF TUBERCULOSIS OF THE CHARITY ORGANIZATION SOCIETY.

SUNDAY, AUG. 23, 1908. (By Courtesy of Siegel Cooper Co.).

A Plan for Hospital Reform.—The commission appointed by the mayor in January, 1906, to plan for the reorganization, extension and administration of the hospital system in New York City, has just presented its report to the mayor, in which it is stated that the public hospital facilities are bad and that the ambulance service is in a chaotic condition, and the commission recommends that the charter be amended to provide for a department of public hospitals administered by a commission appointed by a board of trustees. This new department should also have charge of the public ambulance service. It is recommended that the commissioner of health should be a member of the proposed board of trustees. The report recommends the extension of the sanatorium at Otisville, new buildings at Blackwell's Island, early completion of the Sea View Hospital on Staten Island, the more rapid extension of the public hospital system of the city, the extension of the general facilities of the City Hospital, expediting work on the new Bellevue Hospital, and many other needed improvements.

NEW JERSEY.

Personal.—Dr. James Curts, Paterson, was seriously injured in an automobile accident at Hackensack, August 2.

Scarlet Fever at Collingswood.—Scarlet fever is epidemic at Collingswood and 14 new cases of this disease were reported during the week ended August 15. The contagion is thought to exist in milk bottles which are taken from house to house without being properly sterilized. The board of health is investigating this matter.

Vital Statistics.—During the month ended July 15, 2,589 deaths were reported to the bureau of vital statistics. The prolonged warm weather was no doubt responsible for the high death rate among infants, persons aged 60 years or over, and others whose vitality is low. The number of deaths of children under one year of age for the month is 607, and of persons 60 years and over, 668, a total of 1,375. During the month typhoid fever caused 20 deaths; measles, 21; scarlet fever, 36; whooping cough, 22; diphtheria, 36; malaria, 1; tuberculosis of lungs, 265; tuberculosis of other organs, 49; cancer, 130; cerebrospinal meningitis, 31; diseases of nervous system, 315; diseases of circulatory system, 265; diseases of respiratory system (pneumonia and tuberculosis excepted), 117; pneumonia, 123; infantile diarrhea, 202; diseases of digestive system (infantile diarrhea excepted), 187; nephritis, 156; suicide, 39; all other diseases or causes of death, 574.

NORTH DAKOTA.

Medical Society Meeting.—At the annual meeting of the Grand Forks District Medical Society, held July 8, the following officers were elected: President, Dr. Henry O'Keefe, Grand Forks; vice-president, Dr. John E. Countryman, Grafton; secretary-treasurer, Dr. Archibald L. McDonald, Grand Forks; censors, Drs. H. G. Woutat, Grand Forks, and Gudmund J. Gislason, Grand Forks; delegates to the state medical association, Drs. Zella Stewart, Grand Forks, and William H. Witherstine, Grand Forks.

OHIO.

Medical Staff Resigns.—On account of difficulties between members of the medical staff and the superintendent of the Charles S. Gray Deaconess Hospital, Ironton, seven of the eight members of the medical staff have resigned.

Resolutions Regarding Dr. Eichberg.—The executive committee of the Miami Medical Alumni Association adopted resolutions setting forth the loss sustained by the profession in the decease of Dr. Joseph Eichberg, and condoling with the family of the deceased.

Judge Grants Immunity to Lawbreaker.—Through a recent decision of Judge Reed of Sandusky, a new method of enforcing the state medical law has been discovered. The State Medical Board secured an injunction restraining a so-called "chiropractic" from practicing medicine. This individual protested that he was not practicing medicine. Judge Reed replied that an injunction restraining him from such practice would not interfere with his work at all, and that, consequently, he could have no ground for objection.

Personal.—Drs. John B. Ury and John D. Westrick, Defiance; Dr. William J. Walker, Farmer, and Drs. Noah H. Jackson, Henry W. Cook and Thomas N. Dean, Hicksville, have been appointed members of the Defiance County infirmary board. ——Dr. Willard C. Kendig, Cincinnati, has been appointed examining physician for lunacy cases, and will leave shortly for Europe to take up postgraduate work.——Dr. Walter B. Laffer has succeeded the late Dr. Charles J. Aldrich as neurologist at the Cleveland City Hospital.——Dr. Don C. Hughes, Findlay, has been re-elected head physician for Ohio of the Modern Woodmen of America.——Dr. John H. Rodgers has resigned as a member of the Springfield board of health, and has been succeeded by Dr. Ira E. Seward.——Dr. Terrence J. Cunningham has been made a member of the faculty of the Toledo Medical College.——Dr. Edward M. Keefe, Cincinnati, has been appointed surgeon to St. Mary's Hospital, vice Dr. Herschell D. Hinckley, resigned.——Dr. William C. Schmidter, Cincinnati, has been appointed radiographer to St. Francis' Hospital.——Dr. William S. Keller, Cincinnati, has returned after a year in Europe.

PENNSYLVANIA.

Personal.—Dr. J. J. Mullowney, Easton, left Easton August 21 for Seattle, whence he will sail for China as a missionary. ——Drs. Jesse G. Hilleary and Samuel M. Davenport, Dubois, have returned from Europe.——Dr. Bruce P. Steele, McVeytown, had his right arm fractured recently by the kick of a horse.——Dr. John Shaeffer, McCall's Ferry, was admitted to St. Joseph's Hospital, Lancaster, to be treated for a fracture of the clavicle.

State Society Meeting.—The fifty-eighth annual session of the Medical Society of the State of Pennsylvania is called to meet in Cambridge Springs, on September 14 to 17. Two special parlor cars for members will leave Philadelphia for Cambridge Springs, September 14, at 8:25 a. m. A third special car will be attached at Harrisburg for the convenience of members from Harrisburg, York, Chambersburg, Carlisle and other points. Applications for seats in these cars should be made to Dr. Albert M. Eaton, Philadelphia.

New Tuberculosis Dispensary.—The State Department of Health has secured a building on Bloom Street, Danville, where it will establish a new tuberculosis dispensary. This will be the headquarters of the state's fight against tuberculosis in Montour County. The work will be in charge of Dr. George A. Stock. The returns for the last year show that 13 per cent. of the deaths in Danville were caused by consumption. This is the highest death rate found in any city or town in the state with a population of 8,000 or over. The average rate throughout the state is 10 per cent.

Society Meets.—At the second annual meeting of the Williamsport Medical Association the following officers were elected: President, Dr. John Senn; first vice-president, Dr. Horace G. McCormick; second vice-president, Dr. George D. Nutt; treasurer, Dr. Albert F. Hardt.——At the July meeting of the Jefferson County Medical Society, the following officers were elected: President, Dr. Abraham Balmer, Brookville; vice-president, Dr. Addison H. Bowser, Reynoldsville; secretary and treasurer, Dr. Norman C. Mills, Big Run; reporter, Dr. Charles C. Hammond, Wishaw; and censors, Drs. John H. Murray, Reynoldsville, Sylvester S. Hamilton, Punxsutawney, and John C. Sayers, Reynoldsville.

Typhoid Prevalent.—At the Pennsylvania Reform School at Morganza 28 cases of typhoid fever have developed and one death has occurred.——On August 21, 7 cases of typhoid fever were reported at Carbondale. This brings the total to 19 positive and 50 suspected cases. The source of contagion is said to be from the Bromwell dam, the town's water supply. ——Typhoid fever is epidemic in Spring City and Royersford; 90 cases are present in the former place and 32 are reported from the latter. Dr. J. Scattergood of Chester County and Dr. H. W. Whitcomb of Montgomery County, state medical inspectors, have been detailed by Dr. Samuel G. Dixon, state health commissioner, to take charge of the epidemic.——Nine inmates of the Northampton County prison, at Easton, were reported to be suffering with typhoid fever, August 21.

Pure Food Law Unconstitutional.—In the case of the commonwealth of Pennsylvania against C. M. Keephart, which was tried before Judge Bell of Blair County, August 20, the pure food law of June 1, 1907, was declared unconstitutional. Under this act the retailer had the opportunity to place the responsibility for adulterated goods on the jobber or the manufacturer, a right that nearly all exercised. With this law removed the retailer will be again amenable for all impure foods he may sell, but it is expected that they will exercise their personal rights to demand pure goods and thus avoid prosecutions under the old act. It is the object of the pure food commission to place the case before the Superior Court in time to have the law corrected at the next session of the legislature, if found defective. Judge Bell cites article 3, section 4, of the state constitution, which provides that: "No law shall be revived, amended or the provisions thereof extended or conferred by reference to its title only, but so much thereof that is revived, amended, extended or conferred shall be re-enacted and published at length." In point of fact, the judge states that the act of June 1, 1907, was an amendment to prior acts on the same subjects, the prior act being picked up bodily and thrown into the act of June 1, 1907, by reference to its title only.

Philadelphia.

Bequests to Charity.—The will of the late Levi Mayer bequeathes $1,000 to the Jewish Hospital.——A bequest of $5,000 to the Home for Consumptives at Chestnut Hill is contained in the will of the late James Sadleir, to be used to endow a room to be called the Maria Sadleir room.

Personal.—Dr. Theodore LeBoutillier has been elected clinical professor of pediatrics in the Woman's Medical College of Pennsylvania.——Dr. Charles Lester Leonard has been a guest of the British Medical Association at its meeting in Sheffield and is a delegate of the American Medical Association to the Fourth International Congress on Electrology and Radiology, at Amsterdam, September 1 to 5.——Dr. A. Wexler, resident physician in the Mt. Sinai Hospital, was seriously injured by the explosion of a steam sterilizer, August 20.——Dr. A. E. Harris has gone to Tripoli, Syria.

Health Report.—The total number of deaths reported for the week ended August 22 aggregated 490, an increase of 41 over the number reported in the previous week and an increase of one over the number reported in the corresponding week of last year. This mortality represents a death rate of 16.2 per 1,000 of population. The principal causes of death were: Typhoid fever, 6; measles, 3; pertussis, 5; diphtheria, 2; consumption, 41; cancer, 29; diabetes, 4; apoplexy, 10; hepatic cirrhosis, 5; Bright's disease, 39; heart disease, 27; arterial sclerosis, 15; acute respiratory disease, 26; enteritis, 91; premature birth, 11; congenital debility, 9; senility, 6; suicide, 5; accidents, 15, and marasmus, 10. There were 120 cases of contagious diseases reported, with 8 deaths, as compared with 107 cases and 17 deaths, reported in the preceding week.

VIRGINIA.

Not Guilty.—Dr. Arthur B. Cosby, charged with having performed an illegal operation, was exonerated from the charge at the trial, August 5, before Justice Crutchfield.

Smallpox.—Several cases of mild form have been reported in Alexandria.——A number of cases have developed at Musselman's, Spottsylvania County.

Faculty Changes.—The following changes are announced in the University College of Medicine, Richmond: Professor of theoretical pediatrics, Dr. McGuire Newton; clinical pediatrics, Dr. Paulus A. Irving; theory and practice of medicine, Dr. Alexander G. Brown, Jr.; and practice of medicine and physical diagnosis, Dr. J. Garnett Nelson.

Personal.—At the annual meeting of Fitzhugh Lee Camp, Spanish War Veterans, Richmond, Dr. Rollins Marshall was elected surgeon.——Drs. Harry D. Howe, Hampton, and Joseph T. Buxton, Newport News, returned from Europe July 31.——

Dr. Frank S. Hope, city health officer of Portsmouth, is seriously ill at St. Christopher's Hospital, Norfolk.

Health Bulletins.—Volume 1, Number 1, of the *Virginia Health Bulletin* appeared in July. It gives the details of the work of the state health department, and contains notices and articles relating to tuberculosis, typhoid fever, plague, flies and water animals. The second issue of the bulletin contains a compilation of the statute law of Virginia relating to the health of the people, and a list of the personnel of the county boards of health.

Richmond Vital Statistics.—During July there were 219 deaths in Richmond, 113 decedents being white and 106 colored. This gives an annual death rate of 22.6 per 1,000. The total deaths were 21 less than in June, and 37 less than in July, 1907. There were 33 deaths from diarrhea and enteritis, as compared with 44 last July. Typhoid fever was responsible for 6 deaths; tuberculosis and organic heart disease, for 15 each; nephritis, for 16. There were 101 cases of infectious diseases reported to the health department, 72 cases of typhoid fever, 11 of whooping cough, 9 of diphtheria, 3 each of measles and mumps, 2 of chickenpox and one case of scarlet fever.

Election of Officers.—At the annual meeting of the South Piedmont Medical Society, held in Lynchburg, the following officers were elected: President, Dr. Henry B. Melvin, Houston; vice-presidents, Drs. George W. Cocke, Danville, Walter L. Williams, Brookneal, John A. Owen, South Boston, and Charles W. Tucker, Drakes Branch; secretary, Dr. George A. Stover, South Boston; and treasurer, Dr. James L. Kent, Lynchburg.——At the annual meeting of the Augusta County Medical Society, held in Staunton, the following officers were elected: President, Dr. R. Sumpter Griffith, Basic City; vice-presidents, Drs. Walter F. Hartman, Swoope, Wilbur B. Payne, Covington, and Henry H. Jones, Doehill; secretary, Dr. Achilles L. Tynes, Fishersville; treasurer, Dr. Thomas M. Parkins, Staunton; and censor, Dr. Henry C. Grant, Hermitage.

WASHINGTON.

Fined for Failure to Make Report.—Dr. A. L. McClanahan, Seattle, is said to have been arrested and fined $20 for failure to report a case of diphtheria in his charge. He asserts that he sent in a culture to the health department, but was arrested before the report of the findings was received.

Diphtheria Epidemic.—An epidemic of diphtheria broke out among the government employés on Tatoosh Island during August. At one time all the employés except one were confined to their beds. Dr. John W. Edwards, with two nurses, was sent by the Marine-Hospital Service from Port Townsend.

Personal.—Dr. Albert McConaghy, Seattle, has been elected head of the department of physical development of the public schools of Seattle.——Dr. J. H. Boles, St. Louis, has been appointed physician at the Federal prison, McNiel's Island.——Dr. J. R. Booth, Seattle, has returned from London.——Dr. William R. M. Kellogg, Seattle, underwent an operation for abscess of the liver, August 15.——Dr. James A. La Casa, resident physician of the Fannie C. Paddock Memorial Hospital, Tacoma, has been made acting superintendent to fill the vacancy caused by the death of Dr. Charles McCutcheon.

Plague Prevention Work.—During July, 25 ships were fumigated and 24 ships inspected by Passed Assistant Surgeon Glover, Public Health and Marine-Hospital Service, Seattle. Infection was found to exist among rats in a stable at Eighth Avenue and Madison Street, and precautions were immediately taken by the local health authorities to fumigate and clean out the locality. During July, 5,067 rats were inspected by the plague laboratory. On these 4,753 autopsies were made, and 9 were found to be infected with plague. These rats were all from the stable referred to above. Two postmortems on human subjects were made in cases considered suspicious, with negative results.

GENERAL.

INTERNATIONAL CONGRESS ON TUBERCULOSIS.

List of Special Lectures.

In connection with this Congress to be held next month, a series of special lectures will be delivered in Washington and elsewhere by eminent foreigners. The names of the speakers and the cities in which they will lecture follow:

Studies in Tuberculosis in Domestic Animals and What We May Learn Regarding Human Tuberculosis. Bernard Bang, Copenhagen, Denmark.—Washington, D. C., October 3.

New Methods for the Early Diagnosis of Tuberculosis. A. Calmette, Lille, France.—Philadelphia, September 26.

The Campaign Against Tuberculosis in the Argentine Republic. Emil Coni, Buenos Ayres.—Washington, D. C., October 2.

Campaign Against Tuberculosis as Disease of the Masses in Germany. Dr. B. Fränkel, Berlin.—New York, October 8.

The Causes Which Have Led to the Past Decline in the Death Rate from Tuberculosis and the Light Thrown by This History on Preventive Action for the Future. Arthur Newsholme, Brighton, England.—Washington, D. C., September 29.

Social Life and Tuberculosis. Gotthold Pannwitz, Berlin, Germany.—Philadelphia, September 24.

The Antituberculosis Program—Coordination of Preventive Measures. R. W. Philip, Edinburgh, Scotland.—Boston, October 6.

Tuberculosis of the Heart, Blood and Lymph Vessels. Andres Martinez Vargas, Barcelona, Spain.—New York, October 9.

The Evolution of the Treatment of Pulmonary Tuberculosis. Theodore Williams, London, England.—Philadelphia, September 25.

The Campaign Against Tuberculosis in Large Cities by the Dwelling; Modern Scientific Methods for Its Construction. Dr. Maurice Letulle and M. Augustin Rey.—(Joint lecture)—Washington, D. C., Sept. 30.

Biology of the Bacillus. Dr. A. A. Wladimiroff, St. Petersburg, Russia.—Washington, D. C., September 28.

Collateral Tuberculosis Inflammation. Prof. N. P. Tendeloo, Leyden, Holland.

Lectures, titles of which are not stated, will be given by C. H. Spronck, Utrecht, Holland, Boston, October 7, and Dr. L. Landouzy, Paris.—Washington, September 28.

Papers to be Read in Section I.

DR. WILLIAM H. WELCH, BALTIMORE, PRESIDENT.

This list includes all titles of papers received up to August 13:

The Viability of the Tubercle Bacillus. Milton J. Rosenau, Washington, D. C.

A Study of the Proteids of the Tubercle Bacillus. Victor C. Vaughan, Ann Arbor, Mich.

The Action of Diffuse Light on Bacillus of Tuberculosis. John Weinzerl, Seattle, Wash.

The Morphology of the Tubercle Bacillus. Dwight M. Lewis, New Haven, Conn.

New Homogeneous Cultures of the Tubercle Bacillus. S. Arloing and Paul Courmont, Lyons, France.

Comparative Study of the Tubercle Bacillus of Human and of Bovine Origin. J. N. Davalos and J. Cartaya, Havana, Cuba.

The Virulence of the Bacillus in Connection with the Clinical Evolution of Pulmonary Tuberculosis. A. Rodet, Montpellier, France.

A Chamber in Which Dried Tubercle Bacilli May Be Handled Without Danger. A. Parker Hitchens, Glen Olden, Pa.

Channels of Infection. N. P. Tendeloo, Leyden, Holland.

The Portal of Entry of Tuberculosis. Julius Bartel, Vienna, Austria.

Sources and Channels of Infection of the Tuberculous Contagion. G. Kuss, Angicourt, France.

Portals of Entry of Tuberculosis. S. Bernheim, Paris, France.

Relation of the Air to Tuberculous Contagion. Sterilization of Air. S. Bernheim, Paris, France.

A Study of the Tuberculous Contamination of New York City Milk. Alfred F. Hess, New York City.

Percutaneous Inoculations of Tuberculosis. Jules Courmont and A. Lesieur, Lyons, France.

Immunization Experiments Against Tuberculosis. Julius Bartel, Vienna, Austria.

Contribution to the Immunity to Tuberculosis. Jules Courmont and A. Lesieur, Lyons, France.

Immunity of Men for Tuberculosis. A. B. Marfan, Paris.

Tuberculo-toxoidin and Immunization Serum. Y. Ishigami, Japan.

The Part of Enzymes in Tuberculous Lesions. Eugene L. Opie, New York City.

The Frequency of Healed Tuberculosis of the Mesenteric Glands, with Particular Reference to the Relationship Between Hyaline Deposits in These Glands and the Healing of Tuberculous Lesions. Alfred S. Warthin, Ann Arbor, Mich.

Tuberculous Infection According to the Test of Pathologic Anatomy. S. Arloing, Lyons, France.

Analysis of 1,000 Consecutive Autopsies in Montreal with Reference to the Incidence of Tuberculosis in the Various Organs. John McCrae, Montreal, Canada.

Incidence of Chronic Pleurisy in 1,400 Autopsies in Montreal, and Its Relationship to Tuberculosis. A. R. Landry, Montreal.

Anatomic and Pathologic Study of the Non-follicular Lesions of Tuberculosis. Léon Bernard, Paris, France.

Pneumonia in the Process of Pulmonary Tuberculosis. R. Tripier, Lyons, France.

Anatomic Process of Hemorrhage in Incipient Tuberculosis. J. Paviot, Lyons, France.

The Kidneys in Tuberculosis of the Lungs. Joseph Walsh and C. M. Montgomery, Philadelphia.

Tuberculosis of the Spinal Meninges, with a Consideration of the Mode of Infection of These Structures. D. J. McCarthy, Philadelphia.

The Liver in Tuberculosis. J. T. Ullom, Philadelphia.

Pathology of Tuberculosis of the Peritoneum. Walter Altschul, Prague, Austria.

Experimental Tuberculosis of the Testicle. Charles Esmonet, Puy de Dome, France.

Multiple Toxic Tuberculous Periostitis and Adipositis. O. Amrein, Arosa, Switzerland.

Humoral Properties of Tuberculous Exudate; Prognostic and Therapeutic Value. Paul Courmont, Lyons, France.

Title not given. Camillo Calleja, Valladolid, Spain.

An Experimental and Clinical Study of the Calcium Metabolism in Tuberculosis. Alfred C. Crofton, Chicago.

Distinguished Foreigners to Attend.

The following men are now known to be coming from abroad:

Belgium: J. F. Heymans, Ghent.

Denmark: Holger Rordam and Johannes Fibiger, Copenhagen.

Germany: G. Hormann, Munich; Mme. Lydia Rabinowitsch-Kempner, F. Meyer, G. Kirchner, Robert Koch, Gotthold Pannwitz and F. Helm, Berlin; F. Köhler, Werden a. d. Ruhr; Rumpf, Ebersteinburg b. Baden-Baden; W. Schwabe and Uhlmann, Leipzig; W. von Leube, Würzburg.

Great Britain: W. R. Smith, G. A. Heron, C. Theodore Williams, H. Horton-Smith and A. Latham, London; Sheridan Delépine, Manchester; Sims Woodhead, Cambridge; Nathan Raw, Liverpool; N. D. Bardswell, King Edward Sanatorium, Midhurst; R. W. Philip, Edinburgh; William Osler, Oxford.

France: Charles Baradat, Cannes; F. Barbary, Nice; A. Calmette, Lille; Dupeux, Bordeaux; A. J. Magnin and L. Landouzy, Paris; R. Hervé, Lamotte-Beuvron; A. Leune, Versailles; Arloing, Lyons; P. Gallot, Mentone.

Italy: Umberto Gabbi, Messina; Massalongo, Verona; Eduardo Maragliano, Genoa.

Greece: Bastile Patrikios, Athens.

Holland: C. F. J. Blocker, Voorburg; R. de Josselin de Jong, Rotterdam.

Norway: F. Harbitz, Christiania; Herm. Gade, Hagekiken pr. Bergen.

Austria: Reisinger, Komitau i Böhmen; Lang, H. von Schroetter, Bartel, C. von Pirquet and H. Riedl, Vienna; A. Taussig, J. Dvorack and T. Altschul, Prague.

Roumania: J. Mitulescu, Bucharest.

Russia: S. von Unterberger, N. Th. von Tschigaieff and A. A. Wladimiroff, St. Petersburg.

Sweden: Karl Petren, Upsala; K. O. Medin, Stockholm.

Switzerland: Spengler, Davos-Platz; Th. Exchaquet, Leysin; Egger, Basle.

Spain: Jose Chabas, Valencia; A. Martinez-Vargas, Barcelona.

Hungary: H. Preisz, Budapest.

CANADA.

Ontario Health Report.—The returns to the Provincial Board of Health of Ontario for June give 843 cases of infectious disease, with 249 deaths, as compared with 1,023 cases and 240 deaths for June, 1907. The total deaths for June, 1908, were 2,117, and for the corresponding month of 1907, 2,078, the respective death rates being 12.2 and 12.1 per 1,000.

Stricken from List.—The names of 189 physicians have been stricken from the register of physicians by the Ontario Medical Council on account of non-payment of dues for three or more years. These men have declined, on principle, to pay the dues, holding that when they once become qualified physicians they should not be compelled to pay annual charges.

Contract for Sanatorium Awarded.—The contract for the erection of a sanatorium for consumptives at Tranquille, B. C., has been awarded by the executive committee of the British Columbia Antituberculosis Society to William O'Dell, Vancouver, for $65,000. The provincial government has announced a further donation of $20,000, making a total government appropriation of $50,000. Of this new amount $10,000 is conditional on the erection of a separate building for the treatment of advanced cases.

Personal.—Lieut.-Col. Cassius W. Belton, London, principal medical officer, militia district No. 1, has been detailed as administrative medical officer for the permanent force camp at Quebec in connection with the tercentenary.——Dr. Donald C. Malcolm, senior physician at the General Public Hospital, St. John, N. B., has resigned.——Dr. James R. Bird, Whitewood, Sask., who has been critically ill for the past two or three months, is now reported convalescent.——Dr. Algernon Woolverton, Hamilton, was stricken with cerebral hemorrhage while a passenger on the steamship *Victorian*, and is now in a hospital in Montreal.——Drs. Robert Ferguson, London, and Frederick Guest, St. Thomas, have been appointed local surgeons for the Southwestern Traction Company.——The following Toronto physicians are in England: Drs. Irving H. Cameron, Clarence L. Starr, John N. E. Brown, Robert A. Pyne, R. W. Bruce Smith, Charles O'Reilly, Andrew R. Gordon and John T. Fotheringham.——Dr. Robert J. Blanchard, Winnipeg, president of the Canadian Medical Association, is in England.——Dr. Robert D. Rudolf, Toronto, has been appointed professor of therapeutics in the University of Toronto.——Dr. George A. Bingham, Toronto, associate professor of surgery in the University of Toronto, has returned from England.——Dr. Thomas G. Roddick, Montreal, has resigned as dean of the medical faculty of McGill University and has been succeeded by Dr. Francis J. Shepard. Dr. Roddick is at present in England.——Dr. Ingersoll Olmsted, Hamilton, is spending a few months in Germany.

Society Meetings.—At the twenty-eighth annual meeting of the New Brunswick Medical Society, held at St. Stephen, the following officers were elected: President, Dr. John R. McIntosh, St. John; vice-presidents, Drs. Clinton T. Purdy, Moncton, and Angus J. Murray, Fredericton Junction; corresponding secretary, Dr. J. V. Anglin, St. John; recording secretary, Dr. George G. Corbett, St. John; treasurer, Dr. George G. Melvin, St. John; and members of the medical council, Drs. James P. McInerney, St. John; Edward T. Gaudet, St. Joseph; P. Robertson Inches, St. John; Murray McLaren, St. John, and Joseph M. Deacon, Willtown. The next meeting of the association will be held in St. John.——The Welland County (Ont.) Medical Association held its annual meeting in Welland, July 5, and elected the following officers: President, Dr. Jacob H. Howell, Welland; vice-presidents, Drs. Fred J. T. Old, Port Colborne, George B. Snyder, Ridgeway, and J. M. Dalrymple, Fenwick; and secretary-treasurer, Dr. Ernest L. Garner, Welland.——The seventh annual meeting of the Maritime Medical Association was held in Halifax, N. S., July 1, and the following officers were elected: President, Dr. Patrick C. Murphy, Tignish, P. E. I.; vice-president, Dr. Willis B. Moore, Kentville, N. S.; vice-president for New Brunswick, Dr. S. C. Murray, Albert; and secretary, Dr. George G. Melvin, St. John. The association will meet in Charlottetown, P. E. I., next year.

FOREIGN.

An Antiquackery Exposition.—A traveling exposition of quack advertisements and methods is being organized at Upsala, Sweden, to send throughout the country.

Measures Taken to Prevent Introduction of Malta or Mediterranean Fever into Turkey.—Consul-General Ozmun, Constantinople, reports that it has been decided by the Ottoman government as a measure of public health to prohibit the importation into the empire of sheep, goats or other animals from Malta; also their products such as milk, cheese and meat which contain the germs of the fever known as Malta or Mediterranean fever.

Danish Surgical Association.—T. Rovsing and E. A. Tschering of Copenhagen have issued an appeal to surgeons to combine in a national society to hold six meetings between October and May. The medical directors of large hospitals containing a surgical service are also eligible for membership. The organization of a surgical association has been planned for some time, as it has been realized that addresses on strictly surgical themes are out of place in general medical meetings.

Dollinger Souvenir Volume.—The professional silver jubilee of Prof. Julius Dollinger of Budapest was celebrated recently by his friends, and the last issue of the *Orvosi Hetilap* was expanded into a *Festschrift* in his honor. His present and former pupils contributed a number of interesting articles on various phases of surgery and orthopedics, Dollinger having been privat docent of the latter specialty before he was appointed to the chair of general surgery. The recent systematic organization of cancer research in Hungary is also his work.

Institute for Radium Research at Vienna.—As already mentioned in these columns, the Academy of Sciences at Vienna has now in its possession a few grams of radium salts obtained from about 25,000 pounds of the ore from the Joachimsthal uranium mines. An anonymous benefactor has now given about $100,000 to erect and equip an institute for physical research with this radium. A Physical Institute has long been planned at Vienna and the Radium Institute is to adjoin it. It is hoped that Vienna will become a center for research on the properties of radium, as it has the monopoly at present of its production.

LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, Aug. 15, 1908.

The Care of the Feeble-Minded.

The royal commission on the care of the feeble-minded, which was appointed in 1904, has issued an elaborate report, which will be followed by six volumes of evidence and appendices, giving in detail the grounds on which the commissioners have arrived at their conclusions. They estimate that there are no fewer than 149,268 feeble-minded persons in England and Wales, in addition to the 121,979 who are certified to be insane, making a total of 271,607, or 0.83 per cent. of the population who are unfitted to be entrusted with the direction of their lives or the care of their property. The

commissioners recommend an extension of the existing protection of property under the Lunacy Act of 1890 to all classes of the mentally defective.

The Royal Institute of Public Health.

The annual congress of the Royal Institute of Public Health has been held at Buxton. The president, Sir James Crichton Browne, delivered an important address on "Parsimony in Nutrition." He observed that of all methods of living the most important are those which relate to the upkeep of the body by food. The recognition of its importance had of late years led to constant repetition of the inquiry: "What must I eat to be saved?" and replies had been furnished by a shouting multitude of enthusiasts, cranks and empirics, each with an infallible system of his own. The reaction against overfeeding was in danger of being carried to excess. The standards of Professors Voit and Atwater had until lately been generally accepted by physiologists and the first indication of their being excessive proceeded from an American, Mr. Horace Fletcher, who believed he had discovered the enormous importance of prolonged mastication and the maintenance of health and strength by means of it on much less food than had been regarded as necessary. The late Sir Michael Foster invited Mr. Fletcher to Cambridge, where some observations were made to some extent confirmatory of his claims. In two individuals it was found that complete bodily efficiency was maintained on a well-chewed dietary of less than one-half of that usually taken. But Sir Michael declared it to be doubtful whether continued efficiency could be maintained on this low diet. Further investigations were made by Professor Chittenden at Yale, with results that had attracted widespread attention. But as the investigation proceeded the chewing became unimportant, except in so far as it diminished the craving for food. The real question was found to be the quantity of proteid required by the body. The conclusion was reached that the quantity of proteid required was not more than one-half of that previously considered necessary. Sir James submitted some considerations which should induce his audience to pause before accepting Professor Chittenden's views. If the latter were right, then all the world up to this time, except a few supposed faddists, was wrong. All the successful races of the world had habitually consumed proteid far in excess of Chittenden's standard and what is required for the repair of tissue. It was inconceivable that they should all under the most diverse conditions have made the same mistake. Sir James concluded that it is not so much economy as poverty in nutrition that is the question of the hour.

Sick Workhouse Children to Go to the Country.

The great empty hospital at Carshalton, built for infectious diseases and containing 800 beds will be used for the sick children of the various London infirmaries. These children number over 2,000, and at present are in the crowded wards of the London infirmaries mixed with adult patients.

The Hospitals and Medical Education.

The changes which modern progress has produced in the methods of teaching medical students have resulted in something approaching a crisis in the London medical schools. The development of laboratory methods of instruction has enormously increased the cost of teaching. The schools, especially the unendowed ones, can cover this only by increasing the fees of students to a prohibitive figure or by obtaining contributions from the benevolent rich. But the latter prefer to contribute to the hospitals, and, largely in consequence of the outcry raised by the antivivisectionists, the King's and the Hospital Sunday funds are forbidden to contribute anything to the medical schools, though attached to the hospitals. A proposal was made to reduce the expenses of maintaining the staffs and laboratories of the various medical schools of the metropolis by substituting for them a single institute of medical sciences at which all the preliminary subjects, such as chemistry, physiology, pathology, etc., would be taught. The enormous saving and the increased efficiency of such a scheme are evident. Subscriptions amounting to $500,000 were subscribed for the purpose, but the scheme has fallen through. It only remains for the schools which are in difficulties to endeavor to obtain endowments. But an attempt in this direction by St. George's Hospital School has proved disappointing. In Great Britain the wealthy largely, and even munificently, contribute to the numerous charities, but will seldom give anything for scientific objects. The teaching of medical students is regarded as a process which should be paid for by the students.

Accident or Disease?

A knotty point connected with accident insurance has been raised in the courts. A man was hunting when his horse, caught on a strand of barbed wire concealed in a fence, threw him on wet ground. Thoroughly soaked, he rode home, which took him an hour and a half. Pneumonia supervened the next day and proved fatal. He was insured against accident, and it was contended that the fall, wetting and exposure in combination were the cause of the pneumonia, by diminishing the general vitality of the system and the local resistance of the lung, so that the pneumococci were enabled to multiply. The insurance company relied on a clause in the policy excluding "disease or other intervening cause" as "the direct or proximate cause of death." The case turned on the exact meaning of "direct or proximate." With some doubt the judge decided in favor of the claimant.

Researches Subsidized by the Government.

The president of the local government board has authorized the following researches in connection with the annual grant voted in parliament in aid of scientific investigations, concerning the causes and processes of disease: 1. A further inquiry by Dr. H. M. Gordon into the character and differential tints for the microbes in the throats of patients suffering from scarlet fever. 2. An investigation of protracted and recurrent infection in diphtheria by Dr. Theodore Thomson and Dr. C. J. Thomas. 3. An investigation of protracted and recurrent infection in typhoid fever by Dr. Theodore Thomson, in conjunction with Dr. Hedingham. 4. Investigations by Dr. V. G. Savage into the presence of paratyphoid bacilli in men, the differentiation of streptococci in goats and the bacteriologic measurement of pollutions of milk. 5. A statement of the results of bacteriologic examination of over 7,000 samples of milk from different parts of the country by Professor Delépine. 6. An investigation of the rôle played by flies as carriers of disease, by Dr. Copeman and Professor Nuttall. 7. An inquiry into the condition of flock bedding by Dr. Farrar. The bacteriology and biology of bedding will be undertaken by Professor Nuttall. 8. A statistical inquiry into the social incidence of disease will also be begun. The prevalence of varicose veins and hernia under different social conditions is the first of a number of subjects under this head.

PARIS LETTER.

(*From Our Regular Correspondent.*)

PARIS, FRANCE, Aug. 11, 1908.

INTRODUCTORY.

In these letters, of which this one inaugurates the series, I propose to keep the readers of THE JOURNAL informed in regard to the scientific and professional movement of medicine in France. The professional and social aspects of medicine will often have the first place. In fact, in regard to scientific questions, the care with which THE JOURNAL notes the original works as they appear in the best French periodicals and summarizes the most interesting, relieves the correspondent of the task of dwelling on things that can be learned fully as well from this extremely valuable section, the "Current Medical Literature." However, as the works analyzed in this department of THE JOURNAL represent only one of the many manifestations of scientific activity, I shall occasionally seek to inform the readers of the progress realized in the medical sciences in France in congresses or in reports before scientific societies or in the event of the publication of some book of general interest. But especially I hope to present professional questions—medical economies—for in France, as elsewhere, under the influence of the ever-increasing complexity of social conditions, these questions are becoming more and more important for the physician, while at the same time this aspect of medical life in France is that of which physicians of other countries generally know least, and in regard to which they have only vague ideas.

A SIGN OF THE TIMES: THE PRACTITIONERS' CONGRESS.

From the professional point of view, the present epoch is of unusual interest, as for some time there has been considerable agitation in the profession in France. In April, 1907, for the first time the general practitioners of the country assembled in a congress to discuss professional interests exclusively; and a few weeks ago a second congress was held at Lille, as has already been mentioned in THE JOURNAL. Reform in medical education and the free choice of the physician by the injured in industrial accidents were the main subjects discussed. Without wishing to attribute too much importance to the

results of these two congresses, it must be recognized that the mere fact of such assemblies devoted exclusively to discussion of questions affecting the profession as a whole, is certainly a significant sign of the times.

THE MEDICAL CRISIS.

What are the causes of this agitation? The principal cause lies in the hard times which the medical profession in France is now experiencing. Twenty years ago Professor Bouchard was able to say in inaugurating his course of general pathology: "We are living in a time in which it is good to live, when one is interested in medicine." This is equally true today, but unfortunately many of our confrères might be tempted to modify this aphorism a little by adding: "We are living in a time when it is hard for a physician to live." The practice of medicine has in fact become very unsatisfactory. Of course, there are no exact statistics on the subject. But Dr. A. Clere has been conducting an inquiry which allows a certain insight into the gravity of the situation. Dr. Clere sent out a question blank asking information in regard to: 1, Years of practice; 2, fees received last year; 3, professional expenses. The answers received allowed the following conclusions, based on the total average practice: In the large cities after the second year of practice the income is 3,000 francs ($600), which increases by $200 each year up to the twelfth year, when it ranges from 12,000 to 14,000 francs ($2,400 to $2,800). After the twenty-fifth year it declines, and by the thirty-fifth reaches $600 or less. In the small towns and in the country, the débutant rapidly reaches 4,000 francs ($800), 6,000 ($1,200) by the third year and 8,000 ($1,600) after seven years, without ever geting much higher, and falling by the twenty-fifth year below $1,200, with insignificant results after the thirtieth year.

But to appreciate the actual meaning of these figures the professional expenses must be borne in mind. These expenses are high when one's practice is over $1,000 or $1,200. These expenses are particularly high for specialists, for physicians at health resorts, etc. For example: X., general medicine, income 27,225 francs, professional expenses, 7,000 francs. Y., specialist, income 30,000 francs, professional expenses 14,000, household expenses 15,800 francs. Z., winter resort, fees 6,200 francs, professional expenses 4,000 francs. XX., mineral springs resort, fees 6,000 francs, and professional expenses 3,000 francs. (A franc, it will be remembered, is one-fifth of a dollar, or 20 cents.)

Thus the practice of medicine is far from assuring a livelihood for the physician and his family, and a large number of practitioners find themselves obliged to make up the deficit by extramedical means.

CAUSES OF THE CRISIS.

At first it was believed that one of the principal causes of this crisis was the afflux of foreign students, who after graduation settled down in France to practice medicine. In order to remedy this competition, in 1898 a university diploma was inaugurated for foreign medical students which did not confer the right to practice, like the state diploma. But the importance of this competition had been singularly exaggerated, as is shown by the fact that the number of foreign students has remained about the same since as it was before, very few of them wishing to settle down in France. Foreigners wishing the state diploma are now obliged to produce the same credentials as French students (the baccalaureate degree and certificate of studies in physics, chemistry and natural history), but the number of medical students in the seven medical schools of the country is 819, in 1908 (of whom 635 are inscribed for the university diploma), while the number in 1898 was 908. The restrictive measures adopted in regard to foreign students had no effect in preventing the onward march of the medical crisis, which shows that its cause must be sought elsewhere. This cause it was supposed had been found when the term "*pléthore médicale*," had been pronounced. In France, where picturesque expressions are so popular, this term of "medical plethora" has had a great vogue. And yet I venture to affirm that it is with this term as with so many other formulas which everyone repeats and accepts with confidence, without ever taking the trouble to verify whether and in what measure they represent the truth.

In the first place, it is not true to say that the number of physicians is constantly increasing. Since 1900 the total number of students matriculated at the medical school in Paris has been constantly declining. From 3,328 in 1900 it dropped to 2,754 in 1907, and only during the current year has it gone up a little (3,024). As to the number of physicians graduated by the various faculties, this has also regularly declined. From 1,150 in 1901 it dropped to 914 in 1907. The Paris school, which in 1901 graduated 679 doctors, in 1907 graduated only 434.

There are at present in France (exclusive of the colonies), 19,089 physicians; even adding the health officers (the law of 1892 suppressed the *officiat de santé*, but the health officers appointed before this date have the right to practice), the total number of physicians is 20,020. According to the last census (March, 1906), the total population of France is 39,252,267 inhabitants. There is thus one physician to 1,966 inhabitants, or omitting the health officers, one to 2,056 inhabitants. In other words, for each 10,000 inhabitants there are 4.86 physicians, which is a proportion much lower than that in other countries, especially in the United States.

What proves still better that the total number of physicians is not excessive, is that about 30,000 of the 36,000 communes into which France is divided have no medical man, although 17,000 communes have less than 500 inhabitants each.

AN OVERCROWDED PROFESSION.

Thus we see that France is not overcrowded with physicians. But the medical men are too irregularly distributed. Beside the departments which, like those of the Alpes-Maritimes (Nice), have 12.2 physicians to the 10,000 inhabitants; there are others, like Finistère, where the proportion drops to 1.96 per 10,000. The large cities, of course, have the greatest attraction for medical men. Paris, for example, has 3,901 physicians for a population of 2,763,393, which gives one physician to 708 inhabitants. The proportion is still higher at Nice, where there is one doctor to each 536 inhabitants. This is the real source of the trouble. The young physicians who, in the cities where the profession is so overcrowded, have such a hard time and often succumb in the struggle, could easily gain a livelihood in the small towns and rural districts, where competition and the struggle for existence are much less severe, and where, besides, the professional expenses are infinitely less onerous. This is a most important point. In the large cities a considerable proportion of one's income is absorbed by keeping up an establishment which has to be more or less luxurious. Thus numbers of young physicians who imprudently settle down at Paris find themselves compelled to leave the capital after a certain time. It may not be without interest to remark that of late physicians change their addresses very frequently. Of course, a change of residence may be made for various reasons, but these frequent changes offer an indirect proof of the difficulties experienced by many physicians in establishing a practice at the point first chosen.

On the other hand, the abuse of free medical care aggravates very much the material situation of physicians. On all sides the free clinics are multiplying, and numbers of well-to-do persons, even the wealthy, frequent these clinics without scruples, as well as the free consultations in the hospitals. This has reached such a point that some ironically ask whether we may not soon have to pay the sick to allow us to treat them. The former dean of the Paris medical faculty, Professor Debove, tells the story of a patient in his service whom he wished to demonstrate at a clinical lecture, but the patient demanded pay by the day, saying that he knew his case was very interesting, and that he would enjoy being in a clinic with which he was familiar.

Besides all this, physicians are peculiarly exploited by certain lodges, mutual aid societies and the like. The number of these organizations is constantly increasing, and as they charge their members only very low rates, scarcely sufficient to insure their beneficiaries a suitable daily indemnity in case of illness, they skimp on medical attendance. These societies also present another inconvenience, which is that their members are not allowed their free choice of a physician, but must take the physician hired for the purpose by the society.

THE NEW FRENCH PHARMACOPEIA.

The new Codex will soon be ready for distribution. The last edition of the "Codex medicamentarius" (the French pharmacopeia) was issued Feb. 13, 1884. As this edition had ceased to conform with the present status of therapeutics and with the progress realized in this field of science, a special commission was appointed by the minister of public instruction for revision of the Codex. This commission has been at work for several years and concluded its labors some time ago, so that an official decree of last July stated that the use of the new Codex (edition of 1908) is and remains obligatory on and after September 15. As yet, however, the new edition has failed to make its appearance.

Pharmacology

[CONTRIBUTIONS FROM THE CHEMICAL LABORATORY OF THE AMERICAN MEDICAL ASSOCIATION.]

URISEPTIN.

Another Proprietary of the "Hidden Drug" Type.

W. A. PUCKNER AND W. S. HILPERT.

"Uriseptin," manufactured by the Gardner-Barada Chemical Co. of Chicago and claimed to be a "urinary antiseptic, uric acid solvent and diuretic," was examined in the laboratory of the American Medical Association to determine to what extent the claims made for it are justified.

The preparation as purchased in the open market bears a label which presents the claims of the manufacturers, emphasized by the chemical analysis duly signed by an analyst and attested by a notary. Accompanying is a reproduction of part of the label.

Before the examination had extended very far it was found that discrepancies existed between facts and claims, and by the time the analysis was complete Uriseptin was found to be in the same class as many other proprietary remedies that have been discussed in these columns.

Our examination shows that the most misleading statement is that concerning the "lithium-formaldehyd" compound the

ANALYSIS

Sample of "Uriseptin" manufactured by the Gardner-Barada Chemical Co., Chicago, Ill., was found to contain:

Specific Gravity at 15.5 C	1.0716
Total Solids	20.42 p.c.
Alcohol (Ethyl)	7.66 p.c.
Water (by Difference)	71.92 p.c.
Total Ash	1.48 p.c.
Lithium Oxide	0.50 p.c.
Formaldehyde	5.62 p.c.
Acidity 100 cc equals 6.4 cc Normal Alkali.	
Sugars	Present
Couch Grass Extract	Present
Corn Silk Extract	Present

The Total Solids consist mainly of the sugars and extract of corn silk and couch grass. The couch grass and corn silk extracts were determined by taste and smell in comparison with authentic samples of same products. The Lithium Oxide and the Formaldehyde are in combination in the Uriseptin and together represent 26.77 grains per liquid oz. I remain,

Yours very truly,

(Signed) DR. EDWD. GUDEMAN.

STATE OF ILLINOIS } ss.
COUNTY OF COOK }

Subscribed and sworn to before me this 13th day of May, 1905.

(Signed) PAUL E. BURDEFELDT, Notary Public.

URISEPTIN

FORMULA
(See analysis).

Each fluid ounce of Uriseptin contains Formaldehyde combined with Lithium dissolved in concentrated liquid extract of Corn Silk and Couch Grass, and will liberate a sufficient quantity of Formaldehyde (24 grains) to impregnate the daily secretion of urine (45-50 fluid ounces) to a 1-1000 solution.

PROPERTIES

Urinary Antiseptic, Uric Acid Solvent, Diuretic.

INDICATIONS

Diseases of the urinary tract and their complications—Nephritis, Pyelitis, Urethritis, Gonorrhea, Gleet, Cystitis, Bacteriuria, Uremia, Phosphaturia, Prostatitis. Diseases dependent on uric acid diathesis—Gout, Rheumatism, Calculus, Asthma and generally as an antiseptic and uric acid solvent.

DOSE

Tablespoonful night and morning, or one to two teaspoonfuls four times a day, preferably in hot water.

Reduced reproduction of part of the label from a package of Uriseptin.

presence of which is claimed, more or less directly, by both the manufacturers and the analyst employed by the manufacturers. Although the chemical properties of lithium and formaldehyd indicate in themselves that the existence of such a compound would be most improbable, yet considerable time was spent in searching the chemical literature for such a compound. Thorough search, however, demonstrated that no such compound, nor any that even approximated it, has been described.

The question then arose as to the form in which the lithium and the formaldehyd are present. The statements regarding its properties as a urinary antiseptic and the fact that the preparation is said to slowly liberate formaldehyd in the bladder point strongly to the presence of hexamethylenamin.

Tests[1] were applied to demonstrate whether the formaldehyd was present as a lithium compound, and if not, whether it existed in the form of hexamethylenamin. By these the presence of hexamethylenamin was proved and the absence of formaldehyd in other combinations demonstrated. This fact alone shows that the preparation is deliberately marketed under a false claim, and it shows further that the analysis on the label is worthless. The quantitative method of analysis—which will be published in the *Journal of the American Chemical Society*, September, 1908, and of which an outline appears below[2]—demonstrated the presence of 5.51 gm. hexamethylenamin per 100 c.c. (25.15 gr. per fluidounce).

Besides the hexamethylenamin, Uriseptin contains lithium[3] and a benzoate.[4] Concerning the latter nothing is said in the analysis, whose worthlessness is again demonstrated. By quantitative methods[5] Uriseptin was found to contain lithium and a benzoate in such proportions as would indicate that the lithium and the benzoate radicle exist as lithium benzoate. This fact is further indicated by the claims made for the preparation regarding its properties as a uric acid solvent, for which purpose lithium benzoate is often used. Again, the demonstration that the formaldehyd present is in combination as hexamethylenamin precluded any possible chemical combination between lithium and formaldehyd and adds another strong point in support of the conclusion that the lithium and benzoic acid are in combination as lithium benzoate.

CONCLUSION.

By chemical analysis the active ingredients of Uriseptin are shown to be hexamethylenamin, approximately 5.5 gm. per 100 c.c. (about 25 gr. to each fluid ounce), and lithium benzoate, approximately 0.70 gm. per 100 c.c. (about 11 gr. to each fluid

1. QUALITATIVE TESTS FOR HEXAMETHYLENAMIN.—The identification tests used to demonstrate the presence of hexamethylenamin in Uriseptin were those proposed by Horton (*Ber. d. deut. Chem. Ges.*, xxi, p. 2000) and by P. Dobriner (*Zeit. f. anal. Chem.*, xxxvi, p. 44) in which hexamethylenamin dibromid ($C_6H_{12}N_4Br_2$) and the mercuric chlorid compound ($C_6H_{12}N_46HgCl_2$) are made use of. The addition of bromin water to Uriseptin gave an orange-colored precipitate which when washed and dried had the appearance of the precipitate obtained when solutions of pure hexamethylenamin are treated with the same reagent. This precipitate on drying over potassium hydroxid became a light yellow identical with the corresponding body obtained from pure hexamethylenamin. When boiled with water it gave off the odor of formaldehyd and by ordinary tests ammonia, bromin and hexamethylenamin were found in the resulting solution exactly as is the case when pure hexamethylenamin dibromid is subjected to the same conditions. The melting point of the yellow body obtained was found to be 196-200 C., which is practically the melting point of hexamethylenamin dibromid. As a final and rigorous proof of identity pure hexamethylenamin dibromid was mixed with some of the supposed dibromid and the melting point taken. The melting point of the mixture was found to be 194-200 degrees demonstrating beyond question the identity of the compound. As a confirmative test the mercuric chlorid test was applied. Mercuric chlorid precipitated from Uriseptin an amorphous white body which later turned to a mass of crystals. This crystalline body when washed and dried and boiled with dilute acid liberated formaldehyd. The resulting solution responded to tests for ammonia, hexamethylenamin and mercury. The same test applied to pure hexamethylenamin solution gave exactly the same results. A still further confirmation that hexamethylenamin was present as such and not in some combination which bromin water or mercuric chlorid might decompose, was the fact that chloroform extracted from Uriseptin a substance that had the same crystalline form as pure hexamethylenamin crystallized from chloroform, and which responded to all the above reactions for hexamethylenamin.

2. QUANTITATIVE TEST FOR HEXAMETHYLENAMIN.—Uriseptin was boiled with alkali to liberate and drive off all ammonia present as ammonium compounds, and then boiled with acid to decompose the hexamethylenamin. Finally the mixture was made alkaline again to liberate the ammonia resulting from the decomposition of the hexamethylenamin and distilled into normal acid; the actual quantities taken and the results obtained are given here: It was found that 5.0346 gm. of Uriseptin yielded an equivalent of 74.43 c.c. tenth-normal ammonia and 5.0197 gm. Uriseptin yielded an equivalent of 74.33 c.c. tenth-normal ammonia. The average of the two calculated to hexamethylenamin gives the result given above, 5.51 gm. per 100 c.c. or 25.15 grains hexamethylenamin per fluidounce.

3. LITHIUM.—This element was identified in the ash resulting from the incineration of Uriseptin by the ordinary tests.

4. BENZOIC ACID.—This was found by making a chloroform extraction of an acid solution of Uriseptin and applying tests for benzoic acid to the residue left after the evaporation of the chloroform.

5. QUANTITATIVE TESTS FOR LITHIUM AND BENZOIC ACID.—Lithium was estimated by the method of Gooch (*Amer. Chem. Jour.*, ix, p. 33). Uriseptin, 2.8696 gm., yielded 0.0246 gm. lithium sulphate (Li_2SO_4) and 2.1330 gm. Uriseptin yielded 0.0228 gm. lithium sulphate (Li_2SO_4), giving an average of 0.95 per cent. Li_2SO_4 which is equivalent to 2.35 gm. lithium benzoate in 100 c.c. The benzoic acid was determined by extraction of an acid solution of Uriseptin, evaporating and titrating the residue. Estimations made in this way indicated the presence of 2.00 per cent. of benzoic acid, or 2.10 gm. per 100 c.c. To show that the benzoic acid and lithium are present in the proper proportions to form lithium benzoate, the following is given: Calculating the proportional quantity of benzoic acid required for the quantity of lithium found, the figure, 2.24 gm. per 100 c.c., was obtained, agreeing very closely with the percentage of benzoic acid actually found, that is, 2.00 per cent., or 2.10 gm. per 100 c.c.

ounce), neither of which compounds is mentioned in the advertising matter on the label or in the so-called "analysis" on the label. The statements concerning the composition of Uriseptin are false and appear to be a deliberate attempt to mislead physicians.

COMMENT.—Investigation of the various "patent" and so-called "ethical proprietaries" advertised to the public and to the medical profession shows that those that have any value as therapeutic agents depend for that value on some well-known drug or drugs. Hence, while many proprietaries have some virtue, the ingredients which are of any value are so concealed by the coined and "near-scientific" names applied to them that these drugs are usually unrecognizable. The many and various acetanilid mixtures furnish examples of this class of proprietaries. And now we find another example in that much advertised nostrum, Uriseptin.

According to our chemists, the chief ingredients of Uriseptin are hexamethylenamin and lithium benzoate. Hexamethylenamin is a valuable so-called urinary antiseptic—probably one of the best we have. It is a pity that more physicians do not know the value of this drug in and of itself; it is a common ingredient of many proprietaries, and yet too seldom prescribed under its true name. There is no reason for its being given in the form of a nostrum; it requires no skill in compounding, for it is best given in its powdered form, either in capsules or otherwise. So that, like acetanilid, the old argument of the nostrum men that the preparation needs skill in compounding will not hold. If a physician wants to prescribe hexamethylenamin let him prescribe it in its simplest and best form, and thus know exactly what he is giving.

Lithium benzoate also has its rightful place in the materia medica, but not hidden in a proprietary mixture to be prescribed unknowingly. It is hard to conceive of any one thing that operates more disastrously against scientific therapeutics than the vicious practice of marketing under proprietary names standard and valuable drugs, with their identity purposely concealed. Yet how frequently it is done. Well-known drugs of unquestioned worth are combined with those that are little known and of doubtful value, or more likely absolutely worthless, the mixture is put on the market under a high-sounding name and it is exploited through physicians as a panacea for all kinds of diseases.

In this, as in so many other instances, an "analysis," made to order is given to lend an air of apparent respectability and scientific standing to the preparation or to its exploiters, with the object, of course, of misleading physicians into thinking they are reading unbiased testimony. In addition, the "literature" accompanying the preparation is usually a jargon of pseudo-scientific verbiage put in to serve the same purpose as the analysis—that of catching the careless physician.

This state of affairs will continue just so long as the medical profession will tolerate it—and no longer. So long as members of our profession will prescribe proprietaries on the statements of their owners—both as to their composition and therapeutic value—just so long will pseudochemical and pseudopharmaceutical companies fatten at the expense of the medical profession and to the detriment of the public health.

PYRENOL TABLETS AND EGLATOL CAPSULES.

More Unreliable Horowitz Products.

We have had occasion in commenting on the unreliability of certain manufacturers regarding their so-called synthetic products to refer to the preparations of the *Chemischcs Institut* of Dr. A. Horowitz of Berlin. It has been shown[1] that several of the products of this concern do not possess the composition claimed for them. It is not always possible to produce a synthetic compound by putting the necessary materials together, and the failure of such a combination to possess uniform properties does not always justify an accusation of dishonesty or incompetency. When a pharmaceutical manufacturer, however, puts out tablets that vary widely in their content of the active ingredient, either gross carelessness or intentional fraud must be assumed. G. Frerichs of Bonn has recently investigated the tablets of Pyrenol put out by Horowitz to determine the amount of extraneous material found in them.[2]

The tablets are advertised to contain 0.5 gm. (7.5 grains) of Pyrenol. While the tablets contained much matter which was insoluble and therefore not Pyrenol, yet the total weight of the tablets proved to be on the average but little more than 0.5 gm. (7.5 grains), in some cases even less. The percentage of Pyrenol in these tablets varied from 45 to 90 per cent., and on the average it would appear that in giving the Pyrenol tablets the physician would administer only about two-thirds of the amount of Pyrenol which he would naturally believe that he was giving.

Frerichs has since investigated capsules of Eglatol,[3] a mixture of chloral hydrate, antipyrin, caffein, urethane and menthol, put up by Horowitz and found similar irregularities in weight, the empty capsule sometimes weighing more than the contents. Frerichs sarcastically remarks that the physician may content himself with the feeling that his patient is getting in each capsule about the same amount of gelatin and may rest assured that he will not get too large a dose of the medicine. Frerichs has also examined Arhovin capsules,[4] put up by Horowitz, and found that the amount of Arhovin which they contained varied widely and usually was much less than the amount which they were claimed to contain.

These products, except Eglatol, are on the American market, so that these investigations are of practical importance to the physicians of the United States. Such investigations as these of Frerichs serve to emphasize again the need of constant supervision of manufactured pharmaceutical products.

1. Iodotan, THE JOURNAL A. M. A., March 7, 1908, 784; Arhovin, Ibid., May 9, 1908, 1541.

2. Apotheker Zeitung, July 18, 1908, p. 521.
3. Apotheker Zeitung, July 22, 1908, p. 529.
4. Apotheker Zeitung, July 25, 1908, p. 538.

Correspondence

Determination of Sugar in Urine.

BATTLE CREEK, MICH., Aug. 14, 1908.

To the Editor:—In THE JOURNAL, Aug. 8, 1908, page 496, is an excellent method for the rapid determination of the percentage of sugar in urine. I wish to congratulate Dr. Moffitt on his success in simplifying this determination of the percentage of sugar so that anyone can do it in a few minutes. I believe, however, that I can suggest a slight change in the method that will make it even more simple. If 1 c.c. of Fehling's solution be added to 4 c.c. of aqua ammonia instead of the distilled water the result will be, in effect, Pavy's solution, in which the reduced copper oxid is held in a colorless solution. The advantage of this method is that the end reaction, when the Fehling's solution is completely reduced, can be more accurately and easily determined. One does not have to wait for the copper oxid to settle, nor is it necessary to filter the solution to make sure that all the copper is reduced. I have tested this method, using the one described by Dr. Moffitt as a control, and find that it is accurate.

WILFRID HAUGHEY.

Additional Members of the American Committee of the International Medical Congress.

NORTHEAST HARBOR, MAINE, Aug. 14, 1908.

To the Editor:—Please add the following names inadvertently omitted from the list previously sent you for membership of the American committee for the Sixtenth International Medical Congress, and published in THE JOURNAL, June 13, 1908, page 2008:

W. W. Keen, M.D., Philadelphia.
Joseph Leidy, M.D., Philadelphia.
Charles Kolloch, M.D., Charleston, S. C.
James Ewing, M.D., New York.
Walter James, M.D., New York.
H. A. Hare, M.D., Philadelphia.
George Brewer, M.D., New York.
John Munro, M.D., Boston.
James Tyson, M.D., Philadelphia.
E. L. Trudeau, M.D., Saranac, N. Y.
George E. de Schweinitz, M.D., Philadelphia.
L. J. McMurtry, M.D., Louisville, Ky.
A. A. Van der Veer, Albany, N. Y.

J. H. MUSSER.

Book Notices

OBSTETRICS. A Text-book for the Use of Students and Practitioners. By J. Whitridge Williams, Professor of Obstetrics, Johns Hopkins University. Second Enlarged and Revised Edition. Illustrated. Cloth. Pp. 950. Price, $6.00. New York: D. Appleton & Co., 1907.

This edition has been brought up to date in every respect, many chapters having been rewritten, and new sections added on the "Metabolism of Normal Pregnancy," "Vaginal Cesarean Section," and "Pubiotomy and Contractions of the Pelvic Outlet."

In regard to the etiology of the vomiting of pregnancy, the author refers to his monograph, published in 1906, in which he stated that the present knowledge of the subject justified the differentiation of three types of serious vomiting of pregnancy: reflex, neurotic and toxemic. The reflex variety, of course, is dependent on some abnormality elsewhere in the body. The neurotic type he considers allied to hysteria and readily amenable to suggestive treatment. The toxemic variety is associated with profound disturbance of metabolism manifested by characteristic changes in the urine and the presence of definite changes in the liver and kidneys. He refers to the fact that it was first shown in his clinic that the urine in these patients presents a high ammonia coefficient, indicating that a much greater proportion than usual of the total nitrogen is being excreted in the form of ammonia. He shows the difference in the urine in neurotic and in toxemic vomiting by means of charts showing the relative amounts of ammonia and nitrogen.

He discusses at length eclampsia and the theories of its causation and then quotes Zweifel's apt designation of it as "the disease of theories." As Williams says: "Unfortunately, exact knowledge is still lacking." He does not agree with Davis and Edgar that eclampsia is always a preventable condition, though he states that prophylactic treatment is productive of untold good in many instances. In treatment, if the patient is not markedly improved after delivery, he advises bleeding—from 500 to 800 c.c.—the amount of blood withdrawn to be replaced by physiologic salt solution. He has followed out this procedure with good results, even in patients in whom the pulse was thin and weak. He refers to Krönig's employment of lumbar puncture in these cases, but does not comment on it; he also mentions renal decapsulation as performed by Edebohls, but states that it has been done in too few cases to permit of a proper estimation of its value or indications. The value of veratrum viride, he thinks, is much over-rated.

Pubiotomy, Williams believes, will practically displace Cesarean section for borderland cases, though he states that it is not indicated in cases in which the conjugate vera measures less than 7 centimeters. He describes in detail the technic followed in his clinic and reports good results.

The book is profusely illustrated and a complete bibliography is appended to each chapter. It is commended as one of the most practical text-books on obstetrics.

DIE PRÜFUNG NICHTOFFIZIELLEN PRÄPARATE. Part I. Von Dr. Gustav Mossler. Cloth. Pp. 133. Vienna: Carl Fromme.

The need of an impartial and disinterested description of the synthetic proprietaries and those definite chemicals which are not proprietary, but have been too little used or too recently introduced to secure a place in the Pharmacopeia, is quite generally felt, since these remedies should be brought to some sort of official standard. What has been inaugurated by the medical profession in this country by the formation of the Council on Pharmacy and Chemistry has been carried out in other countries under the auspices of the pharmaceutical authorities. Thus we have the publication of the British Codex under authority of the Council of the Pharmaceutical Society of Great Britain and the work undertaken by the pharmaceutical institute of the University of Berlin. Professor Mossler's position gives a certain authoritative character to his work. The book is intended primarily for the pharmacist as a guide in the examination of synthetic and unofficial chemicals as to their identity and purity. Nothing is said in the body of the work of pharmacologic actions or therapeutic uses. Some of the preparations are official in the U. S. Pharmacopeia. The preparations are listed alphabetically by their chemical names, the proprietary name being given a subordinate place. The information of the body of the work is supplemented by several important tables, one giving common names and, very briefly, therapeutic characters, a second being a list of the non-official reagents, the third, a bibliography, the fourth, a list of patents and trademarks. This volume constitutes the first part of the work and it is the intention of the author in the second part to introduce the remedies and preparations which have appeared since the publication of the first part and to omit those the use of which has been discontinued. The work appears to be well done and to merit the support and the approval of both the medical and pharmaceutical professions.

ESSENTIALS OF DIETETICS. By Amy Elizabeth Pope, Instructor in Dietetics in the Schools of Nursing of the New York Hospital, and Mary L. Carpenter, Director of Domestic Science of the Public Schools, Saratoga Springs, New York. Cloth. Pp. 249. New York: G. P. Putnam's Sons, 1908.

In the preface the authors state that they have kept in mind three guiding principles: 1, That the book should be adapted in plan and scope to the needs of nursing schools; 2, that it should make a useful dietary guide for the home; and 3, that it should be sufficiently comprehensive to include essential, without being so large as to bewilder by the inclusion of unessential information. After giving the necessary fundamental definitions regarding the classification of foods—nitrogenous, non-nitrogenous, carbohydrates, etc.—the authors discuss milk, eggs, fish, meat and plant foods, a chapter being devoted to each of these subjects. In the chapter on dietaries are considered methods of measuring heat, food values, calculating dietaries, etc., and it also includes several practical tables. "Feeding of Infants and Children," and "Diet in Disease" each occupies a chapter. The rest of the book is devoted to miscellaneous matter relating directly to the subject and includes a large variety of recipes, methods of cooking, etc. Keeping in mind the object of the book and those for whom it is intended, it is in every way satisfactory. While the book is not written for the medical profession, physicians will find in it many useful suggestions and much practical information.

DISEASES OF THE NERVOUS SYSTEM. By H. Campbell Thomson, M.D. (Lond.), F.R.C.P., Dean of and Medical Tutor in the Middlesex Hospital. Cloth. Pp. 480, with illustrations. Price, $2.75. Chicago: W. T. Keener & Co., 1908.

This book is of convenient size and shape, although not large, covers an extensive subject very completely and is altogether abreast of the times. It is well written, the descriptions in it being clear and full, but without unnecessary verbiage.

The introductory section is devoted to the structure of the nervous system and to reflexes, rigidity, contractures, electrical reactions and lumbar puncture; the next, to diseases of peripheral nerves, while the following sections deal with the structural and functional diseases of the cord and brain.

The illustrations are numerous and well selected. Many are from the author's own collection, and others were supplied by Pierre Marie. Nervous diseases, better than many others, can be illustrated by well-selected photographs. The author has been fortunate in his selection; while a few are not so well produced and printed as could be desired, all are characteristic.

This is a good text-book for students and an excellent reference book for practitioners. It is, moreover, not so large but that a practitioner wishing to refresh his knowledge of nervous diseases can do so quickly.

THE OPERATIONS OF SURGERY. By Jacobson and Rowlands, Vol. I, Upper Extremity, Head, Neck and Thorax. Cloth. Pp. 926. Price, $6.00. Vol. II, Abdomen, Lower Extremity and Spine. Cloth. Pp. 1139. Price, $6.00. Philadelphia: P. Blakiston's Son & Co., 1908.

This work, now in its fifth edition, has undergone a steady enlargement and improvement from the first. The first edition appeared as a single modest volume; the second as a large volume; the third as two small volumes; the fourth

as one small and one large volume, and now the fifth edition, as two large volumes, of nearly 1,000 pages each. The special feature of this work which makes it so valuable, in addition to the operative technic, is the vast amount of instructive information concerning the indications for and the results of the various operative measures described. In this respect, the work has stood at the head of its class, and it is with profound regret that one reads in the preface that: "Hereafter, if further editions be called for the pen that is responsible will be in other hands." As we have reviewed the work in detail previously, further comment is unnecessary.

TEXT-BOOK OF OPHTHALMOLOGY. By Dr. Ernest Fuchs, Professor of Ophthalmology in the University of Vienna. Authorized translation from the eleventh revised and greatly enlarged German edition with numerous additions, by Alexander Duane, M.D., Surgeon, Ophthalmic and Aural Institute, New York, with 441 Illustrations. Philadelphia and London: J. B. Lippincott Company.

This text-book has been referred to by reviewers as the "Bible of Ophthalmology." This new edition is the same complete work that former editions have been. One notices some changes due to recent advances in general medicine and in the specialty of ophthalmology. The editor of the American edition has made additions to the chapters on external eye muscles and refraction which are important, giving as they do the views of a competent and conservative American ophthalmologist. These additions can be recommended particularly to the younger American students of ophthalmology, and to foreigners, many of whom have obtained a wrong idea of our views on these subjects.

INSOMNIA AND NERVE STRAIN. By H. S. Upson, M.D., Attending Neurologist to the Lakeside Hospital, Cleveland, Ohio. Cloth. Pp. 142, with Skiagraphic Illustrations. Price, $1.50. New York: G. P. Putnam's Sons, 1908.

The following list of topics discussed in these pages will give some idea of the contents of the volume: Illustrative Cases; Sleep and Fatigue; Emotions; Subconscious Sensory Reflexes; Atavistic Symptoms; Derangements of Formal Thought; Inductive Inhibition; Convulsive Seizure and Chronic Spasms; Vascular Potential; Mechanism of the Vasoneural Circuit; Nutrition and Vitality; Cell Potential in Evolution; Epileptic Neuropsychoses; Prognosis; Therapy; Predisposition and Heredity.

Something more than one-fifth of the volume is devoted to "illustrative cases" of insomnia, melancholia, hysteria, mania, neurasthenia, dementia præcox, etc., in which the patients were cured by removal of impacted teeth. Unfortunately, the condition of patients long after this treatment is rarely detailed by the author, but the cases are dismissed with the statement that they remained well. Many of these cases are illustrated by skiagraphs of the jaws and teeth. The treatment is novel and awakens doubt in the minds of most readers. However, there is no doubt of its efficacy in the author's mind. This portion of the book is the most noteworthy.

The author does not substantiate the claim that he has effected cures in the many cases described of the diseases enumerated above by removing the cause of the troubles by pulling teeth. That relief has sometimes been effected is doubtless true, for many such cases are relievable and often curable by suggestion and by nervous and mental shocks of various kinds. But that impacted teeth were really causative of the disorders named is very doubtful.

WHY WORRY? By George Lincoln Walton, M.D., Consulting Neurologist to the Massachusetts General Hospital. Pp. 275. Cloth. Price, $1.00. Philadelphia: J. B. Lippincott Co., 1908.

Why worry? That's the question! And sometimes it is a most difficult one to answer. While this is the title of the book before us, it would have been more appropriate to have used the imperative "don't worry," which exhortation, however, would be as difficult to obey as the question is hard to answer. But this book tells us not only why we should not worry, but how to avoid worrying. It is an axiom that most of our troubles, mental as well as physical, are imaginary, and consequently can be avoided if we only will it so. This is the keynote of the book: it is applied to every-day affairs, to social and business worries, as well as to physical. A chapter is devoted to hypochondria, another to neurasthenia and another to sleeplessness and to other purely medical topics. The chapter on sleep is a most sensible one, and could be read even by physicians with decided profit. We are told that, as a rule, the loss of sleep is not harmful, in and of itself, but that worrying about it is what plays the mischief. Worrying because one can not sleep exaggerates not only the cause but the effect. The book is full of sound philosophy and common sense. While it is written for the layman, the physician may read it with profit to himself, and will find in it many hints that will be helpful in his practice.

PHYSICAL SIGNS OF DISEASES OF THE THORAX AND ABDOMEN. By James E. H. Sawyer, M.A., M.D., Oxon., M.R.C.P. Lond. Pp. 188. Cloth. Price, $2.00. New York: William Wood & Co.

There is nothing novel in the subject-matter of this book or in the method of treating it. Inspection, palpation, mensuration, succussion, percussion and auscultation of the thorax and abdomen are described accurately, and what can be learned from these methods of examination is fully stated. The causes of the phenomena demonstrated by physical examination in health and disease are given with theoretical explanations. The illustrations which are mostly diagnostic are useful, and many are in part or wholly original.

Miscellany

Typhoid in Ireland.—According to the consular reports, that for a number of years there has been an unexplained prevalence of typhoid fever in Belfast, attended by serious mortality, notwithstanding the excellent water supply and the enforcement of many sanitary precautions. So persistent was the succession of cases that the disease might be said to be endemic rather than epidemic in form. The local government board for Ireland determined to make special inquiry as to its cause, and in February, 1907, appointed a commission for that purpose. This commission was directed to investigate thoroughly not only the unexplained prevalence of enteric fever, but also every matter bearing on the public health of Belfast. This work engaged the members until recently, and the report of the commission has now been made public. The commission found that the mortality from this cause during the past 25 years in Belfast has been so great that no other city or town of the United Kingdom has ever approached it. During the years 1900, 1901 and 1902 the annual death rate from this disease was 0.72 per 1,000 of population in Belfast as compared with 0.34 in Dublin, 0.13 in Manchester, and 0.15 in England and Wales. The continuous prevalence of this disease has been contemporaneous with improvements in the water supply and in the general sanitary condition of the city. The most manifest facts regarding it ascertained by the commission were that it affected the working classes rather than the wealthier population, and that the Jewish residents of the city were practically exempt. Dr. L. W. Darra Mair, medical inspector of the local government board for England, was asked by his fellow-members to devote himself to investigating the causes of the disease prevailing under these conditions. His conclusions were adopted by the commission as part of its report. The commission completely absolved the local water supply. One limited outbreak was traced to infected milk; but the endemic prevalence of the disease was shown to be due to the unrestricted gathering of cockles, mussels and other shellfish from the "slob-lands" of Belfast Lough, which are laden with the city's sewage. Hundreds of acres are exposed at low tide, and the shellfish are gathered by the poorer classes, being eaten chiefly raw. The exemption of the Jews was due to their refusal to eat these molluscs. The evidence on which these conclusions are based is fully set forth, with the urgent recommendation that: "as no system of sewage treatment within practicable limits of cost will fully safeguard the lough shellfish, powers should be obtained to prohibit the gathering of the same for human consumption."

Pasteurized Milk an Economic Factor.—In his recent address to the students at Heidelberg, Nathan Straus pointed to the fact that the old theorizing, indifferent arm chair phase of political economy has passed, and its students find that it is concerned with all sorts of positive facts, which must be learned by patient investigation. It is not strange, then, to find students of political economy listening to a lec-

ture in an experimental milk laboratory. Straus discusses the economic importance of infant mortality and its relation to the milk supply. He also adopts v. Behring's view that tuberculosis is chiefly acquired by alimentary infection in infancy and hence the milk supply becomes doubly important. The ideal remedy—breast feeding—is unattainable at present. In a town like Berlin more than two-thirds of the babies have to be bottle-fed." The production of pure milk from a bacteriologic standpoint involves an expense that necessitates a prohibitive price (15 cents a quart). The only practicable remedy is pasteurization, and this has been shown not only to be feasible on a large scale, but very effective in the reduction of infant mortality. Straus reviews the objections to pasteurization and shows that they are either unfounded or of little moment. He reviews his own efforts in popularizing the use of pasteurized milk for infant feeding, and gives an account of his recent experiment in the village of Sandhausen, near Heidelberg, where the mortality of children under 1 year was 46 per cent. previous to his establishment of a laboratory to furnish pasteurized milk. He says: "We have now the record for June—the first month of the harvesters of infant lives—and so far my prophecy has come true. In the five months ending June 30, only 7 children under 2 years have died, as against 24, the average for the same five months of the last five years." According to Straus' observation, the handling of market milk in Germany is not ideal: "Even big dealers are singularly lax, from an American point of view, in this matter. I see even superior bottled milk being hauled through the streets with nothing better than a thin cloth to protect it from the glaring sun. I greatly fear that in this country less attention is bestowed on the milk than on the beer. You keep that cool while it is traveling and after reaching the place of consumption, and leave the milk too often to take care of itself. Truly, there is something to be learned from brewers and landlords."

The Economic Cost of Disease.—The department of medical economics of the *Ohio State Medical Journal* for July contains the following interesting item: "The Bense bill enacted last winter gives authority to the State Board of Health to require of cities the purification of sewage and the public water supply. This law has much power for good. Physicians in every state should urge its enforcement if necessary to secure pure water. . . . Seven hundred and forty-eight cases of typhoid fever were reported to the Columbus board of health for April, 1908. Allowing 10 per cent. of deaths and $10,000 for the economic value of a human life; $2 a day as the earning capacity for only half the afflicted; $10 a week for nursing; $125 for average funeral expenses and $50 for medical services, all very low estimates, the cost would be as follows:

"Seventy-five deaths	$ 75,000.00
"Loss in earnings	26,928.00
"Funeral expenses	9,375.00
"Medical services	37,400.00
"Nursing	44,800.00
"Total	$193,503.00"

In a word, the bill for typhoid fever for the city of Columbus for one month is nearly $200,000. This is really a minimum estimate and the real figures are probably considerably higher. Drinking water contaminated with sewage is not only a dirty habit, but an expensive one.

Pathogenesis of Eclampsia.—U. Fernandez has been publishing in the *Semana Medica* his experimental research on the internal secretion of the decidua serotina. The conclusion, in the issue, May 21, gives 52 microphotographs of the findings. Subcutaneous injection of placental elements from an animal of the same species induced in gravid guinea-pigs a pathologic condition closely resembling puerperal eclampsia, in both clinical and anatomic manifestations. When the injections induced such a reaction that the animal cast her young, there was no tendency to convulsions. Simultaneous injection of liver tissue or of thyroid gland seemed to have a retarding, a neutralizing action on the placental poison injected. The experiments seem to establish beyond question the existence of an internal secretion in the decidua serotina. Also that placental elements are deported from the placenta into the maternal circulation. Further, that these elements induce defensive processes in the blood, revealed by phenomena of hemolysis and syncytiolysis. Also that these phenomena of syncytiolysis liberate the eclamptic poison which then displays its dreaded action on the maternal organs, inducing the clinical picture of eclampsia.

Prophylaxis of Hydatid Cysts.—Two years ago a committee was appointed by the minister of agriculture in Argentina to devise means to reduce the prevalence of echinococcus disease. Among the measures proposed by the committee are placarding the walls with posters showing the various phases of evolution of the scolex and of hydatid cysts in man and its mode of propagation, with warnings against drinking unboiled water or uncooked vegetables from sources liable to be polluted, against allowing sources to become polluted, and, above all, warning against dogs, urging restriction of their number, and that they should not be allowed access to uncooked meat. The *Tænia echinococcus* seems to be unable to complete its life cycle outside the body of the dog. The committee also advises that a pamphlet portraying the dangers of echinococcus affections and measures for prophylaxis should be distributed with each dog license, and that no dogs should be allowed in slaughter houses, and that all vagrant dogs should be killed. The chairman of the committee is Dr. D. J. Cranwell, director of the *Revista de la Sociedad Medica de Argentina*, which reproduces in its last issue the educational posters designed for prophylaxis.

Lumbar Puncture in Epilepsy.—F. Tissot, in *Progrès Méd.*, May 9, 1908, reports the results of a series of experiments to estimate the therapeutic value of lumbar puncture in epilepsy. Six patients were under observation for periods varying from 34 to 55 days, during which time they received from 8 to 15 punctures, in which an average quantity of 36 c.c. was abstracted from the cerebrospinal fluid. The pressure was generally high. The results are not favorable to the utility of puncture in this disorder; the attacks were not modified; very often they occurred a few hours after the puncture, showing that the withdrawal of even large amounts of fluid (sometimes as much as 60 or 70 c.c.) had no special effect in preventing the convulsion. No bad symptoms followed the operations except slight headache, quickly relieved by lying down. Tissot has never observed any troublesome results from this measure, wherever employed, for diagnostic or therapeutic purposes.

Diagnosis of Tabes.—R. Burnand, in the *Revue Médicale de la Suisse Romande*, xxviii, April 20, 1908, discusses the differential importance of the unilateral absence of the knee-jerk, relating a case in which this was observed. The patient had suffered from attacks of dyspepsia every month or two, with repeated vomiting, and he applied to the physician merely for relief from these dyspeptic disturbances. A day or so before these attacks he always had transient pain in the back, which he had learned to recognize as a premonitory symptom of the "dyspepsia." Lymphocytosis was found on lumbar puncture, confirming the assumption of tabes. The patient's constant and violent use of the right knee in his trade as a rope maker had evidently localized the trouble in the corresponding portion of the spinal cord. The lumbar puncture seemed to have a favorable effect on the gastric crises, as they did not return afterward while the patient was under observation.

Ammonia Coefficient in Urine.—Hopkins, in the *Bulletin of the University College of Medicine*, Richmond, Va., July, describes a method of determining the ammonia coefficient by direct nesslerization. The ammonia is determined by diluting the urine volumetrically until the ammonia nitrogen in the dilution is between 0.001 and 0.02 mg. per c.c. A definite portion of the dilution is nesslerized, and the ammonia nitrogen in 1 c.c. of urine computed. The total nitrogen is estimated in the same manner, first reducing the organic nitrogen to ammonium sulphate by the Kjeldahl process. The ratio between the amount of ammonia nitrogen and total nitrogen thus determined is taken as the ammonia coefficient; as there is a possible error of 10 per cent. in the method, Hopkins concludes that it is applicable to the determination of pathologic variations only. For this purpose it answers the requirements. It

is sufficiently accurate to determine variations of clinical importance, and has great advantages in its rapidity and in the simplicity of technic and apparatus used.

The Nostrum Campaign.—The fight against the nostrums continues to gain recruits even among journals in no way connected with the Association. In its issue for March the *Journal of the Allied Societies*, a New York dental journal, thinks that "the time has come for the dental profession to take its stand for ethical medicine," and says that it "has decided to take its place with the American Medical Association's JOURNAL and others that are opposed to nostrums." To this end it announces its adoption of the two rules to apply to its advertising pages in respect of all remedial and prophylactic preparations, which are practically Rules 1 and 8 of the Council on Pharmacy and Chemistry. As basic principles these rules cover the essence of the struggle. The other rules are more in the nature of detailed applications to avoid the evasion of the former.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

BOOKS ON "CHRISTIAN SCIENCE."

PRINCETON, KY., Aug. 17, 1908.

To the Editor.—Will you please advise me as to the best work on the subject of Christian Science exposed from a medical point of view? If you can also furnish any other information I shall appreciate it. Quote prices on these books if convenient to do so.

CHARLES J. POLLARD.

ANSWER.—We do not know of any book that can be said to fulfill our correspondent's requirement, namely, an exposé of Christian Science from a medical point of view. There are four aspects from which the subject must be regarded by those who would study it critically: 1, as a system of philosophy; 2, as a religion; 3, as a mode of healing; and 4, as an organization having vast political, social and economic significance. The theoretic or didactic side of Christian Science as a mode of therapeutics has to be considered in reference to the first and second divisions above made, namely, philosophy and religion. The practical results in the application of its therapeutic claims constitute what we understand our correspondent to mean, when he asks for a medical exposé of the subject. The only systematic investigations of actual cases of which we are aware, are:

1. The *Medical News'* Investigations into the Claims of Christian Science. By J. B. Huber, M.D., *Medical News*, New York, Jan. 21, 28, Feb. 24 and 11, 1899. This is an investigation as to the correctness of the alleged facts in 20 patients who claimed to have been cured by Christian Science treatment. All cases offered were examined.

2. One Hundred Christian Science Cures. By Richard C. Cabot, M.D. *McClure's Magazine*, August, 1908.

With regard to the study of the subject in general, the following list, though not exhaustive, may be serviceable:

Christian Science. By Mark Twain. New York: Harper Bros., 1907. Cloth. Pages, 362. Price, $1.75. With all its humorous word clothing this book is nevertheless a serious consideration of the subject under heads 1, 2 and 4 of the above classification. The socio-politico-economic aspect is particularly strongly emphasized.

Christian Science, the Faith and Its Founder. By Lyman D. Powell. New York: G. P. Putnam's Sons, 1907. Cloth. Price, $1.25 net.

Christian Science. By William A. Purrington. New York: E. B. Treat & Co., 1900. Cloth. Pages, 194. Price, $1.00. This book deals largely with the medicolegal aspects.

Mary Baker G. Eddy. The Story of Her Life. By Georgine Milmine, a serial in *McClure's Magazine*, commencing January, 1907, ending October, 1907. This is really a biography of Mrs. Eddy and a history of the rise and development of Christian Science, drawn from facts of public record, documents, first hand testimony, etc. It is not argumentative, though the general tendency of the facts adduced is inevitably of the character of an impeachment.

The Passing of Christian Science. By C. G. Harger, Jr. Buffalo, N. Y.: D. J. Stoddard, 365 Washington street, 1899. Cloth. Pages, 91. This brochure consists of two parts: 1. Christian Science as a Religious Belief; 2. Christian Science as a Means of Physical Healing. To this is added a useful dictionary of curious and eccentric beliefs.

Crazes, Credulities and Christian Science. By C. M. Oughton, M.D. Chicago: E. H. Colgrove, 1901. Cloth. Pages, 121. Price, $1.00.

Christian Science, Medicine and Occultism. By Albert Moll, M.D. (Berlin.) Translated by F. J. Rebman. London: Rebman Limited, 1902. Paper. Pages, 47. Price, six-pence. (Twelve cents.) (Rebman Company, 1123 Broadway, N. Y.) This is an excellent statement from the neurologist's point of view.

Valid Objections to So-called Christian Science. By Rev. A. F. Underhill. New York: Edwin S. Gorham, Fourth avenue and 22nd street, 1902. Paper. Pages, 49. This pamphlet discusses the questions: Is Christian Science Christian? Is Christian Science Scientific? and deals with Systematic Knowledge *vs.* Speculation; Results Ethical and Moral; and Results Physical and Hygienic.

The Christian Science Delusion. By Rev. A. C. Dixon. Boston: W. H. Smith, 25 Stanhope street, 1903. Paper. Pages, 52. A critical examination of the theoretic basis of Christian Science.

Christian Science Dissected. By A. O. Sector. St. Louis: Christian Publishing Co., 1900. Paper, pages 61.

Christian Science. A Sociologic Study. By Charles A. L. Reed, M.D. Cincinnati: McClelland & Co., 1898.

In addition to the foregoing we must mention a book that will certainly throw great light on the subject for those not specially versed in psychology, and will elucidate the actual inwardness of whatever vitality Christian Science may possess, and show what it really consists in as distinguished from the claims made for it, and the explanations given of it.

Religion and Medicine. The Moral Control of Nervous Disorders. By Ellwood Worcester, D.D., Samuel McComb, D.D., and Isador H. Coriat, M.D. New York: Moffat, Yard & Co. Cloth, 1908. Pages, 416. Price, $1.50. This book was written as an exposition of what is known as the Emanuel movement, and is not specifically directed against Christian Science. A perusal of it, however, will prove invaluable in studying the subject.

Another book of considerable utility as an explanatory sidelight is: The Force of Mind, or the Mental Factor in Medicine. By A. T. Schofield, M.D. Philadelphia: P. Blakiston's Sons, 1902. Cloth, pages 309. Price, $2.

No man can effectively combat any position unless he first makes himself master of what that position really is. The best and most tangible—indeed the only—exposition that we have seen of the nature of Christian Science philosophy in terms that render it susceptible of critical and logical examination as a system of philosophy, is an article entitled The Outer World and The Inner Man, by Martha R. White, *Christian Science Journal*, March, 1908. Everyone who wishes really to gauge, as a wise soldier should do, the strength of the enemy, will find in this exposition what we conceive to be the best argument on behalf of a true philosophic basis for Christian Science that can be brought forward. But leaving this academic discussion to the philosophers, the utter immateriality of the nature of ultimate realities to the facts of every-day life is tersely and forcibly expressed in an article on:

The Philosophy of Christian Science. By Borden P. Bowne, L.L.B., of Boston University. Originally published in the *Christian Advocate*.

FORMALDEHYD IN MILK: ITS DETECTION AND ITS HARMFULNESS.

HAGERSTOWN, MD., Aug. 19, 1908.

To the Editor:—1. Will you give reliable tests for formaldehyd in milk and state the sources of possible error in making the tests? 2. Is the presence of formaldehyd in milk considered injurious to infants and children, and what symptoms does it produce?

A. C. MAISCH.

ANSWER.—1. The most reliable test for the detection of formaldehyd in milk is that based on the color which is formed when concentrated sulphuric acid (Hehner's test) or hydrochloric acid (Leach's test) containing a trace of iron is added to milk containing formaldehyd.

Hehner's Test: To a few cubic centimeters of concentrated sulphuric acid, to which a trace of some ferric salt has been added, add the milk to be tested so as to form a distinct layer on top of the acid and allow to stand. If formaldehyd be present, even one part to a million of milk, a violet coloration will take place at the junction of the two liquids.

Leach's Method: Dilute the milk with an equal volume of water and add for each cubic centimeter of the diluted milk 1 c.c. of concentrated hydrochloric acid containing 1 c.c. of 10 per cent. ferric chlorid solution, to each 500 c.c. of acid. The mixture is heated in a casserole over the bare flame to 80 or 90° C., rotating to break the curd which forms. If formaldehyd be present, a violet color will appear.

2. The presence of formaldehyd in milk is generally considered injurious to infants and children. On the other hand, some experimental observers have concluded that in the small quantities used in preserving milk (from 1 to 50,000 to 1 to 20,000) formaldehyd prevents the development of the more common bacteria without interfering with the digestibility of the milk. A full review of this subject may be found in Bulletin No. 41 of the Hygienic Laboratory, U. S. Public Health and Marine-Hospital Service, from which we quote: "It may be said, finally, however, that the medical and scientific opinion is decidedly against the use of preservatives in milk, not only on account of possible injuries, especially to young children, resulting from the continued use of such preservatives in small amounts, but also for the reason that the use of such substances, if permitted, would ultimately tend to carelessness and uncleanliness in the handling of milk."

The principal objection made to the use of formaldehyd in milk is that it impairs the digestibility of the milk and tends to injure the digestive organs. It renders the milk less easily coagulable by rennin. Immediate symptoms which could be attributed with certainty to the presence of formaldehyd in the milk do not appear to have been observed.

RESUSCITATION AFTER DROWNING.

SUPERIOR, NEB., Aug. 6, 1908.

To the Editor:—I would like to see a discussion of the following points:

1. What is the longest authentic time that a body has lain under water and been resuscitated after removal?

2. If, on recovering a body from the water there is no heart beat perceptible to auscultation, will treatment avail anything, and if it should, is it not positive proof that the heart had not stopped?

3. How long should efforts at resuscitation be continued in hopeful cases? J. G. WALKER.

ANSWER.—The effect of immersion in water depends on whether the person remains conscious and attempts to breathe or whether syncope occurs and breathing stops. In the first case death occurs in 1 to 5 minutes after water has entered the lungs. The power to remain under water without breathing varies considerably and is somewhat improved by practice. According to Draper ("Legal Medicine"), the longest time on record is that of Professor Enochs, namely, 4 minutes 46½ seconds. Draper also cites a report to the United States Life Saving Service of the resuscitation of Stanley S. Holmes, 5½ years old, after an immersion of 25 minutes. The resuscitation produced signs of life at the end of 45 minutes. Draper states that this is the longest time on record. In this case it is probable that syncope occurred and respiration ceased so that no water entered the lungs.

2. If in a case of drowning the heart has actually stopped beating, it is safe to say that the patient is dead and beyond resuscitation, but it must be remembered that the heart beat may be so feeble and indistinct as to be imperceptible even to the most expert auscultator. Hence, one is liable to think that the person is actually dead when such is not the case.

3. From the above it will be seen that apparently hopeless cases may be hopeful ones, therefore efforts of resuscitation after drowning should be persevered in for several hours unless signs of death are positive. Cases are on record in which persons have been restored only after efforts had been continued for over four hours.

PRECIPITIN TEST FOR HUMAN BLOOD.

AUG. 15, 1908.

To the Editor:—Please give the precipitin test for the identification of human blood. B. J. A.

ANSWER.—A rabbit is injected intraperitoneally with 10 c.c. of human blood serum at intervals of a few days until from 6 to 8 injections have been given so that there is formed in the animal's blood a substance that will produce a precipitate in diluted human blood serum. The animal is now allowed to rest for a week, after which its blood is drawn and the serum obtained. The blood to be tested, if fresh, is diluted 100 times, but if dried, the material is soaked with distilled water and the filtered solution is mixed with an equal volume of double normal salt solution (1.2 to 1.8 parts of sodium chlorid to 100 parts of water). To the clear solution thus prepared a few drops of the serum of the immune animal are added and the mixture allowed to stand to see whether a precipitate will occur. If the material contains human blood, a precipitate will occur within half an hour. The precipitin is specific for human blood as distinguished from that of other animals except those of the ape family. Occasionally the blood of the domestic animals will give some haziness if not sufficiently diluted. The serum of the rabbit may be dried and retains its precipitating power for about six weeks. Such dried serum is dissolved from the filter paper, on which it has been dried, by means of a little normal salt solution, filtered if necessary, and used as described above.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, United States Army, for the week ending Aug. 22, 1908:

Reasoner, M. A., first lieut., M. C., granted leave of absence for twenty-four days.

Tefft, William H., capt., M. C., having completed the duty for which he was ordered to Washington, D. C., will return to station in Cuba.

LeWald, Leon T., capt., M. C., granted twenty-five days leave of absence.

Woodruff, Charles E., major, M. C., granted three months leave of absence.

Bruns, Earl H., first lieut., M. C., will, upon the expiration of his present leave of absence, proceed to Fort Monroe, Va., for station and duty.

Culler, R. M., capt., M. C., relieved from duty at Fort Monroe, Va., and ordered to Fort Logan H. Roots, Ark., for station and duty.

Webb, W. D., capt., M. C., granted four months leave of absence, to take effect about Sept. 1, 1908.

Barney, Fred M., first lieut., M. R. C., granted thirty days' leave of absence.

Torney, George H., colonel, M. C., ordered to proceed at once from San Francisco to Alascadero Ranch, Cal., for duty in connection with laying out camp and sanitation of same.

Wilson, Elsworth, first lieut., M. R. C., relieved from duty Dept. Rifle Range, Cal., on completion of target practice and ordered to Fort Rosecrans, Cal., for temporary duty.

Snyder, H. McC., first lieut., M. R. C., relieved from temporary duty at Fort Rosecrans, Cal., and ordered to return to San Francisco, and resume duty at the Army General Hospital.

Shortlidge, E. D., capt., M. C., granted fifteen days' leave of absence.

Wells, Frank M., Card, Daniel P., Bowman, M. H., Chamberlain, G. E., first lieuts., M. R. C., ordered to active duty in the service of the United States.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending Aug. 22, 1908:

Diehl, O., surgeon, detached from the Navy Yard, Philadelphia, and ordered to the *Charleston* and to additional duty as fleet surgeon of the third squadron, Pacific Fleet.

Gates, M. F., surgeon, detached from the *Charleston* and ordered to the Navy Yard, Philadelphia.

McDonnell, W. N., P. A. surgeon, detached from duty in connection with the Navy Rifle Team, Camp Perry, Ohio, and ordered to the Navy Recruiting Station, Minneapolis.

Lando, M. E., asst.-surgeon, detached from the Navy Recruiting Station, Minneapolis, and ordered to Washington, D. C., September 14, for examination for promotion, and then to wait orders.

Bishop, L. W., P. A. surgeon, ordered to temporary duty at the Navy Recruiting Station, New York.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Aug. 21, 1908:

SMALLPOX—UNITED STATES.

California: Oakland, July 1-31, 2 cases; San Francisco, Aug. 2-8, 5 cases; Stockton, July 1-31, 1 case.
Idaho: Carey, May 21-Aug. 4, 21 cases.
Indiana: Fort Wayne, Aug. 2-8, 1 case; Indianapolis, Aug. 3-9, 7 cases; Jeffersonville, July 1-31, 5 cases; Lafayette, Aug. 4-10, 2 cases.
Missouri: Kansas City, Aug. 2-8, 1 case; St. Joseph, 3 cases.
New York: Schenectady, June 1-30, 2 cases.
Ohio: Canton, June 6-13, 1 case; Dayton, Aug. 2-8, 2 cases; Toledo, 1 case.
Oregon: Portland, July 1-31, 47 cases.
Washington: Spokane, Aug. 2-8, 2 cases.
Wisconsin: LaCrosse, Aug. 2-8, 15 cases; Manitowoc, 1 case.
Utah: Salt Lake City, July 1-31, 10 cases.

SMALLPOX—FOREIGN.

Arabia: Aden, July 20, 3 deaths.
Argentina: Buenos Aires, May 1-31, 2 deaths.
Austria: Silesia, July 19-25, 4 cases.
Borneo: Sandakan, May 1-31, 37 cases, 13 deaths.
Brazil: Pernambuco, June 1-30, 55 deaths; Rio de Janeiro, July 8-16, 1 case, 1 death, on steamship *Peruviana*.
Ceylon: Colombo, June 28-July 4, 7 cases, 2 deaths.
China: Hongkong, June 28-July 4, 4 cases, 2 deaths.
Ecuador: Guayaquil, June 28-July 11, 6 deaths.
Egypt: General, June 26-July 8, 44 cases, 44 deaths; Cairo, July 16-22, 2 cases, 2 deaths.
India: Bombay, July 8-14, 11 deaths; Calcutta, June 28-July 4, 5 deaths.
Indo-China: Cholen, June 28-July 4, 2 cases, 2 deaths.
Java: Batavia, June 28-July 4, 5 cases.
Peru: Lima, July 13, 5 cases in the lazaretto.
Portugal: Lisbon, July 19-25, 2 cases.
Russia: St. Petersburg, July 12-18, 29 cases, 5 deaths.
Spain: Barcelona, July 21-31, 1 case; Valencia, July 19-Aug. 1, 6 cases, 1 death.
Turkey in Asia: Bagdad, June 22-July 4, 44 cases, 12 deaths.
Turkey in Europe: July 20-26, 9 deaths.
Zanzibar: June 7-14, 1 death.

CHOLERA.

Ceylon: Colombo, June 25-July 4, 14 deaths.
India: Bombay, July 1-14, 1 death; Calcutta, June 28-July 4, 29 deaths; Madras, June 5-10, 13 deaths.
Indo-China: Cholen, June 28-July 4, 20 cases, 20 deaths.
Russia: Astrachan, July 21-Aug. 6, 51 cases, 24 deaths.
Saratov: Aug. 6, 14 cases, 2 deaths.
Zarizyn: July 24-Aug. 6, 96 cases, 55 deaths.

YELLOW FEVER.

Brazil: Pernambuco, June 15-30, 1 death.
Cuba: Danquiri, Aug. 1-8, 2 cases, 1 death.
Ecuador: Guayaquil, June 28-July 11, 3 deaths.
Martinique: Port de France, Aug. 17, present.
Mexico: Veracruz, Aug. 14, 1 case.

PLAGUE.

Brazil: Pernambuco, June 1-15, 1 death.
British East Africa: Port Florence, June 11-26, 6 cases, 4 deaths.
Chili: Antofagasta, July 12, 3 cases; Arica, July 15, 1 case; Iquique, July 14, 3 cases.
China: Amoy, in native city and vicinity, July 14, present; Hongkong, June 28-July 4, 65 cases, 61 deaths.
Ecuador: Guayaquil, June 28-July 11, 2 deaths.
Egypt, general: July 24-30, 21 cases, 7 deaths; Alexandria, July 3-28, 10 cases, 3 deaths; Port Said, July 8, 1 from steamship *Orenoque*.
India, general: June 28-July 4, 512 cases, 435 deaths.
Japan: Kobe, July 12-18, 1 case; Osaka, July 4-11, 2 cases, 2 deaths.
Peru, general: July 7-13, 32 cases, 13 deaths; Salaverry, July 19, 1 case.
Turkey in Asia: Adalia, July 27, 2 cases.

Public Health and Marine-Hospital Service.

List of changes of stations and duties of commissioned and other officers of the Public Health and Marine-Hospital Service for the seven days ended Aug. 19, 1908.

Kalloch, P. C., surgeon, directed to proceed to the marine-hospital, Portland, Me., for special temporary duty, on completion of which duty to rejoin his station at Portland (Me.) Quarantine station.

Magruder, G. M., surgeon, granted leave of absence for 7 days, from Aug. 2, 1908, under Paragraph 191, Service Regulations.

Wertenbaker, C. P., surgeon, directed to proceed to New York, N. Y., for special temporary duty.

Wertenbaker, C. P., surgeon, leave of absence granted for 1 month, from Aug. 9, 1908, amended so as to grant him 14 days from Aug. 9, 1908.

Stimpson, W. G., surgeon, directed to proceed to Tatoosh Island, Washington, for special temporary duty, on completion of which to rejoin his station at Port Townsend, Washington.

Oakley, J. H., P. A. surgeon, directed to assume temporary charge of the marine-hospital at Port Townsend, Washington, during the absence of Surgeon W. G. Stimpson.

Holt, J. M., P. A. surgeon, granted leave of absence for 16 days, from Aug. 15, 1908.

Vogel, C. W., P. A. surgeon, directed to report to the Director of the Hygienic Laboratory, Washington, D. C., for temporary duty.

Schereschewsky, J. W., P. A. surgeon, granted leave of absence for 1 month, from Aug. 17, 1908.

Faunleroy, C. M., asst.-surgeon, directed to proceed to the marine-hospital at Mobile, Ala., for special temporary duty, on completion of which to rejoin his station at New Orleans, La.

Wilson, J. C., acting asst.-surgeon, granted leave of absence for 7 days, from Aug. 13, 1908.

Watson, Harvey J., acting asst.-surgeon, granted leave of absence for 30 days, from Sept. 1, 1908.

Sinclair, A. N., acting asst.-surgeon, granted leave of absence for 25 days, from Aug. 12, 1908.

Delgado, J. M., acting asst.-surgeon, granted leave of absence for 3 days, from Aug. 4, 1908, on account of sickness.

Keiller, W., acting asst.-surgeon, granted leave of absence for 7 days, from Aug. 7, 1908.

Keiller, W., acting asst.-surgeon, granted leave of absence for 23 days, from Aug. 13, 1908.

Mason, W. C., acting asst.-surgeon, granted leave of absence for 7 days, from Sept. 13, 1908.

Reimer, H. B. C., acting asst.-surgeon, granted leave of absence for 6 days from Aug. 10, 1908.

Richardson, S. W., pharmacist, detailed to represent the service at the meeting of the American Pharmaceutical Association to be held at Hot Springs, Ark., Sept. 7-12, 1908, on completion of which duty to rejoin his station at Buffalo, N. Y.

Roehrig, A. M., pharmacist, detailed to represent the service at the meeting of the American Pharmaceutical Association to be held at Hot Springs, Ark., Sept. 7-12, 1908, on completion of which duty to rejoin his station at Stapleton, N. Y.

BOARDS CONVENED.

Boards of medical officers were convened to meet on Aug. 24, 1908, for the purpose of making physical examination of applicants for the position of cadet in the Revenue-Cutter Service as follows:

Washington, D. C.: Asst. Surgeon-General J. M. Eager, chairman; Asst. Surgeon-General J. W. Kerr, recorder.

New York, N. Y.: P. A. Surgeon J. A. Nydegger, chairman; P. A. Surgeon C. H. Lavinder, recorder.

Chicago, Ill.: Surgeon G. B. Young, chairman; Asst.-Surgeon C. E. Wood, recorder.

Boston, Mass.: Surgeon R. M. Woodward, chairman; Asst.-Surgeon T. W. Salmon, recorder.

Baltimore, Md.: P. A. Surgeon J. T. Burkhalter, chairman; Acting Asst.-Surgeon C. W. Hughes, recorder.

Philadelphia, Pa.: Surgeon J. M. Gassaway, chairman; Acting Asst.-Surgeon H. Horning, recorder.

San Francisco, Cal.: Surgeon H. W. Austin, chairman; P. A. Surgeon W. W. King, recorder.

Detroit, Mich.: Surgeon Fairfax Irwin, chairman; P. A. Surgeon M. J. White, recorder.

Portland, Me.: Surgeon P. C. Kalloch, chairman; acting Asst.-Surgeon A. F. Stuart, recorder.

Mobile, Ala.: Acting Asst.-Surgeon J. O. Rush, chairman; acting Asst.-Surgeon C. S. Carter, recorder.

Galveston, Texas: P. A. Surgeon G. M. Corput, chairman; acting Asst. Surgeon W. H. Gammon, recorder.

Seattle, Wash.: P. A. Surgeon M. W. Glover, chairman; Asst.-Surgeon C. W. Chapin, recorder.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

Organization in the Northwest.

The August number of *Northwest Medicine* contains the address of Dr. R. C. Coffey, president of the Oregon State Medical Association, as delivered before the annual meeting of that body on July 1. Dr. Coffey's subject was "Organization and Centralization of Medicine and Surgery of the Northwest." He first considered organization in general and the present-day movement toward medical organization, showing that better organization in every case secured better conditions and results, at an enormous saving of capital and energy. Applying this general question to the needs of the medical profession, he then asked: "Is organization possible for the betterment of the health and education of the community and for the establishment of a higher basis for the medical profession?" answering his question by showing that the present medical reorganization movement is a natural process of the times. In this connection, he said:

We have organized ourselves independently of the people and one of the first things we are to consider pertains to combining with our organization the strength of the public for whom we are laboring, if they only know what our aims are. . . . We go before a public gathering or a legislative body, present our claims and give our reasons why the public health of the community demands certain things; we are received with a pitying smile, not because the people are bad or ungrateful, but because they are ignorant of our work, and because we close ourselves up in a shell and refuse to discuss these matters with them, drawing closely about us our cloak of dignity, which is only a relic of heathenism.

The remedy for this condition, Dr. Coffey found in public education, in which connection he reviewed the addresses made at the Chicago session of the American Medical Association and emphasized the fact that the keynote of all of these papers was the education of the public. He then said:

In educating the public . . . we must not forget to organize our own affairs or educate our own profession. There are three agents in the education of our profession—our schools, our examining boards and our journals. We take the ground that these agents are public service organizations, and that as physicians we have a right to a voice in the management and direction of the policies of these organizations.

After reviewing the work of the Council on Medical Education, and the tendency toward the consolidation of medical schools, Dr. Coffey took up the situation as it exists in the Northwest, advising the fusion of the two schools in Oregon, in order that there may be a single, strong medical school in the Northwest. He then discussed reciprocity, particularly as it affects the states in question, and also advised the establishment of a journal by the Oregon, Washington and Idaho State Medical Associations, recommending the appointment of a journal committee by these three state associations for the purpose of considering this question.

Dr. Coffey's excellent and timely address, with its recommendations, was referred to a committee, which recommended the adoption of the recommendations and the appointment of committees on reciprocity, on the consolidation of medical schools, and on medical journals. The action of the Washington and Idaho State Associations and the results of this movement will be watched by all those inter-

ested in medical organization in the Northwest. Dr. Coffey's proposals are eminently practical and are in line with the best interests of the profession as a whole and especially of the profession in the three states involved. The active cooperation of these three state associations will go far toward improving conditions in the individual states and will do much to prepare them for the great career which lies before them.

Organization in Southeastern Pennsylvania.

Reports from southeastern Pennsylvania indicate a gratifying condition of energy and activity on the part of the county societies in that part of the state. The Bucks County Medical Society, which until this year met quarterly, now has monthly postgraduate meetings and quarterly general meetings, having divided the county into four sections, the members in each section carrying on the postgraduate work in harmony. A reading course for the coming year has been outlined. The Lehigh County Medical Society recently held an annual assembly, lasting all day. On Wednesday, July 22, a special medical day was held at Willow Grove Park, under the auspices of the county societies of Berks, Bucks, Chester, Delaware, Lehigh, Montgomery, Northampton and Philadelphia. Addresses were made by Dr. Albert M. Eaton, president of the Philadelphia County Medical Society, Dr. W. L. Estes, president of the Medical Society of the State of Pennsylvania, and Dr. Joseph D. Bryant, past president of the American Medical Association. Special attention has been given by these societies in the past few months to the importance and necessity of medical legislation, particularly to laws regulating the practice of medicine and the establishing of proper hospitals for the insane, inebriates, etc. The work being done is both valuable and gratifying, and will be productive of benefit to the people of the entire state.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES.

DR. JOHN H. BLACKBURN, DIRECTOR.
BOWLING GREEN, KENTUCKY.

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

First Month.

SECOND WEEKLY MEETING.

DISEASES OF THE PERICARDIUM.

ETIOLOGY.

Age, sex, seasons. Primary rare. Secondary to rheumatism, septic processes, acute infections; tuberculosis; pneumonia, gout and chronic nephritis, traumatism. Pericarditis by extension: pleuro-pneumonia, pleurisy; endocarditis, myocarditis; disease of the thoracic wall and lymph glands.

VARIETIES, PATHOLOGY.

Acute Plastic, Fibrinous.—Pathology.—Extent of involvement, changes in endothelia, exudate, character and amount, terminations, change in heart muscle.

Pericarditis with Effusion.—Secondary to plastic. (a) Serofibrinous: Changes in visceral and parietal layers, character and quantity of exudate. (b) Purulent: Changes in pericardial layers, exudate, organisms usually present. Association with general or local disease. (c) Hemorrhagic: Associated with tuberculosis, malignancy, and in aged. Character and quantity of exudate, pericardial changes.

Adherent Pericardium.—Extent and structure of adhesions, appearance in recent and chronic cases.

DISEASES OF ENDOCARDIUM.

ACUTE SIMPLE ENDOCARDITIS.

Etiology.—Frequency in articular rheumatism. In tonsillitis, scarlet fever, pneumonia, chorea, phthisis. In cancer, gout and chronic nephritis. Rare in measles, diphtheria, chickenpox.

Diagnosis.—Previous history, present illness, effect on pulse and temperature. Physical signs. Recurring endocarditis.

MALIGNANT, PERNICIOUS, ENDOCARDITIS.

Pathology.—Changes occurring in (a) vegetative, (b) ulcerative, (c) suppurative, lesions. Micro-organisms usually found. Mural endocarditis. Associated pathology: primary septic processes; embolism, infarcts, number and location.

Symptoms.—Association with other diseases, temperature curve, pulse, infarctions, progressive anemia, sweats, rashes, physical signs. Diverse clinical pictures; septic type, typhoid type, cardiac group, cerebral group.

CHRONIC ENDOCARDITIS.

Etiology.—Age, constitutional diseases, acute infections, exertion. Influence in production of chronic valvular lesions.

Medical Education and State Boards of Registration

COMING EXAMINATIONS.

MASSACHUSETTS Board of Registration in Medicine, State House, Boston, Sept. 8-10. Secretary, Dr. Edwin B. Harvey, Boston.

IOWA State Board of Medical Examiners, Capitol Building, Des Moines, September 16-18. Secretary, Dr. Louis A. Thomas, Des Moines.

NEW YORK State Board of Medical Examiners, Albany, September 22-25. Chief of Examinations Division, Charles F. Wheelock, Albany.

Oregon July Report.

Dr. Byron E. Miller, secretary of the Board of Medical Examiners of the State of Oregon, reports the written examination held at Portland, July 7-9, 1908. The number of subjects examined in was 15; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 61, of whom 23 passed and 38 failed. The following colleges were represented:

College.	Year. Grad.	Per Cent.
PASSED.		
Oakland Coll. of Med. and Surg.	(1908)	78.8
College of P. and S., Chicago	(1900) 76.1; (1908)	75.4
Chicago Coll. of Med. and Surg.	(1908)	75
University of Louisville	(1895)	75.4
College of P. and S., Baltimore	(1901)	80.9
Johns Hopkins Med. School	(1908)	92
Detroit Coll. of Med.	(1896)	78.8
Hamline University	(1908)	81.6
St. Louis University	(1907)	79.8
University Med. Coll., Kansas City	(1908)	81.7
Albany Med. Coll.	(1887)	78.7
Omaha Med. Coll.	(1897)	79.2
College of P. and S., New York	(1906)	84.4
Willamette University	(1907)	78.8
University of Oregon	(1907) 84.7; (1908)	77.3, 78.6
Jefferson Med. Coll.	(1902)	79
University of Pennsylvania	(1907) 82.2; (1908)	79.9
Queen's University, Kingston, Ontario	(1897)	85
University of Christiania, Norway	(1900)	77.2
FAILED.		
George Washington Univ.	(1907) 57.1; (1908)	63.7
Northwestern Univ. Med. School	(1907) 65.6; (1908)	71.2
College of P. and S., Chicago,	(1901) 63.7; (1903) 53.2; 1907 69.4.	
Hahnemann Med. Coll., Chicago	(1906)	67.7
American Med. Miss. Coll.	(1905)	73
Physio-Med. Coll. of Indiana	(1906)	66.2
Keokuk Med. Coll., Coll. of P. and S.	(1907)	*63
University of Iowa	(1907)	69.9
Kansas Med. Coll.	(1905)	71.6
University of Louisville	(1907)	55.4
University of Missouri	(1893)	*66.1
Kansas City Med. Coll.	(1901)	58.6
St. Louis Coll. of P. and S.	(1906) 68.8; (1908)	59
Omaha Med. Coll.	(1896)	56.7
Ohio Med. University	(1904)	72.8
Starling Med. Coll.	(1908)	69
University of Oregon	(1908) 62.3, 62.3, 65, 67.2, 68.9, 70.4, 71, 74.5	
Willamette University	(1907) 65.3, 65.7, 68.3	
Jefferson Med. Coll.	(1850) 0; (1886)	66.2
University of Tennessee	(1895)	47.8
University of Vermont	(1905)	69.6
Western University, Ontario	(1894)	61.7
University of Christiania, Norway	(1906)	71.9

*Failed at January, 1908, examination.

Tennessee May Report.

Dr. T. J. Happel, secretary of the State Board of Medical Examiners of Tennessee, reports the written examinations held at Memphis, Nashville and Knoxville, May 5-6, 1908. The number of subjects examined in was 8; total number of

questions asked, 64; percentage required to pass, 75. The total number of candidates examined was 300, of whom 213 passed, including 55 non-graduates, and 87 failed, including 45 non-graduates. Ten reciprocal licenses were issued. The following colleges were represented:

College.	Year Grad.	Per Cent.
PASSED.		
Birmingham Medical College	(1903)	88.5
Georgetown University	(1896)	79.2
Howard University, Washington	(1907)	84
Yale University	(1906)	92.7
Bennett Coll. of Ecl. Med. and Surg.	(1907)	75
University of Iowa	(1881)	87.3
University of Louisville	(1908)	93
Louisville Med. Coll.	(1904)	78
Louisville and Hosp. Med. Coll.	(1908)	80
Flint Medical Coll.	(1904)	75
Tulane University of Louisiana. (1890) 76; (1899) 90.6; (1905) 90; (1907) 93.1.		
College of P. and S., Baltimore	(1900) 88.3; (1907)	84.2
Harvard Medical School	(1908)	76
Tufts College Medical School	(1906) 78.2	90.7
St. Louis Coll. of P. and S.	(1908)	85
Barnes Med. Coll., (1908) 75.5, 78, 78, 80, 81, 84, 88, 91, 92, 93, 96		
Cleveland Coll. of P. and S.	(1906)	90.7
Knoxville Med. Coll.	(1906) 79; (1908)	77.5
University of Nashville (1899) 81; (1905) 79, 85; (1906) 94; (1907) 81.6, 93; (1908) 75, 76, 78, 80, 80, 81, 81, 82, 84, 84, 88, 89.3, 90, 94.		
University of Tennessee, (1905) 75, 80, 82.5; (1908) 75, 77, 78, 80, 81, 81, 81.6, 83, 83, 85, 98.		
College of P. and S., Memphis, (1907) 79; (1908) 79, 82, 88, 86, 93		
Meharry Med. Coll., (1899) 77; (1888) 75; (1904) 77; (1906) 75, 76, 85; (1907) 76, 76, 77, 87; (1908) 75, 75, 75, 76, 76, 77, 79, 80, 81, 82, 83, 84, 84, 84, 85, 85, 85, 88, 89, 89.6.		
Chattanoooga Med. Coll., (1907) 75.3; (1908) 75.3, 77.2, 80, 82, 84, 87.7, 88, 88.1, 89.7.		
Memphis Hosp. Med. Coll., (1899) 76; (1900) 85; (1902) 78; (1904) 75; (1906) 90; (1908) 77, 79, 80, 82, 82, 83, 85, 85, 88, 90, 92.		
Tennessee Med. Coll., (1907) 85; (1908) 75, 77, 78.1, 81.5, 83.1, 83.5, 84, 85, 86, 92.		
Vanderbilt University, (1908) 78, 82, 82, 85, 86, 90, 90, 91, 92, 93		
University of West Tennessee	(1904) 85; (1907) 76; (1908)	86.6
University of the South	(1906)	86
University of Virginia	(1907)	93
Heidelberg University, Germany	(1888)	91.5
FAILED.		
Atlanta School of Med.	(1908)	66
National Med. University, Chicago	(1907)	72.5
Marion Med. Coll., Marion, Indiana	(1896)	63
St. Louis Coll. of P. and S.	(1908)	69
Medical Coll. of Ohio	(1902)	48
Meharry Med. Co'l., (1904) 57, 67; (1905) 61; (1906) 51; (1907) 65, 70; (1908) 67, 69, 71.		
University of Tennessee, (1900) 68; (1901) 48; (1906) 62, 68; (1908) 63.1, 72, 73.		
Chattanooga Med. Coll., (1894) 30.6; (1905) 39, 64; (1906) 62, 72.3; (1907) 42, 65; (1908) 65.2, 68, 68.5.		
Chattanooga National Med. Coll.	(...*)	55.5
Knoxville Med. Coll.	(1904) 69.5; (1905)	67
Memphis Hosp. Med. Coll.	(1908)	69, 71
University of the South	(1905)	64.5
Tennessee Med. Coll.	(1907) 67.5; (1908)	68.7, 71
University of West Tennessee	(1905) 70; (1908)	68.6

College.	Year Grad.	Reciprocity with.
LICENSED THROUGH RECIPROCITY.		
Atlanta Med. Coll.	(1898)	Georgia
Chicago Homeo. Med. Coll.	(1899)	Georgia
Hospital Coll. of Med., Louisville	(1897)	(1903) Kentucky
College of P. and S., New York	(1900)	Georgia
University of Tennessee	(1903)	(1904) Kentucky
Vanderbilt University	(1904)	Kentucky
Chattanooga Med. Coll.	(1900)	Georgia
Milwaukee Med. Coll.	(1899)	Illinois

*Year of graduation in doubt.

Marriages

JOHN PURVES, M.D., to Miss Jane Porter, both of Oakland, Cal., August 10.

WALTER H. MAYHEW, M.D., to Miss Seipp, both of Baltimore, Md., August 5.

WALTER JAY FORD, M.D., to ROBERTA WIMER, M.D., both of Seattle, Wash., July 22.

I. DAVID LOEWY, M.D., to Miss Lilian Aarons, both of Philadelphia, Pa., August 15.

OTIS EISMAN, M.D., Pittsburg, Pa., to Miss Alice B. Percy, at Atlantic City, August 1.

THOMAS P. LLOYD, M.D., to Miss Elsie Jacobs, both of Shreveport, La., August 18.

SAMUEL H. DURGIN, M.D., to Mrs. Emma Elizabeth Adams, both of Boston, Mass., August 12.

ALFRED M. CALL, M.D., Rugby, N. D., to Miss Eva Camilla Egeland of Fisher, Minn., June 27.

SOLOMON C. KATZOFF, M.D., Baltimore, Md., to Miss Yetta Berman, at Lancaster, Pa., August 18.

WILLIAM C. F. WITTE, M.D., Milwaukee, Wis., to Miss Ethel Roslyn Bennett of Athelstane, Wis., at Milwaukee, August 5.

WILLIAM DOUGLAS MACON, M.D., Charlottesville, Va., to Mrs. Mercy Hunter Sherrerd, at Berkeley Springs, W. Va., August 11.

ARTHUR N. TASKER, M.D., first lieutenant, Medical Corps, U. S. Army, to Miss Mary Elizabeth Berry of Washington, D. C., August 8.

GARFIELD L. MCKINNEY, M.D., first lieutenant, Medical Corps, U. S. Army, to ELIZABETH SUTTON MOORE, M.D., of Pittsburg, Pa., August 8.

Deaths

Samuel E. Gillam, M.D. University of Michigan Department of Medicine and Surgery, Ann Arbor, 1869; Bellevue Hospital Medical College, New York City, 1878; of St. Johns, Mich.; a member of the Michigan State Medical Society; once president of the Clinton County Medical Society; for several years local surgeon of the Detroit, Grand Haven and Milwaukee Railway; and president of the local board of United States Pension Examiners; died suddenly, August 13, from heart disease, while fishing in a launch on White Lake, Mich., aged 63.

Charles Henry Burr, M.D. Medical School of Harvard University, Boston, 1882; University and Bellevue Hospital Medical College, New York City, 1901; a member of the Massachusetts Medical Society; assistant surgeon to the Manhattan Eye, Ear and Throat Hospital, in the eye department; surgeon to the eye and ear department of the Northern Dispensary, and clinical assistant to the nose and throat department of the New York Post-Graduate Hospital; died at the home of his wife's parents in South Framingham, Mass., August 13, from nephritis, after an illness of several months, aged 53.

William Buck, M.D. Medical School of Maine, Medical Department of Bowdoin College, Brunswick, 1859; a member of the Maine Medical Association; assistant surgeon and surgeon of the Sixth Maine Volunteer Infantry throughout the Civil War; for a number of terms a member of the board of selectmen and school board of Foxcroft, Maine; a member of the state legislature and treasurer of Piscataquis County; and for thirty-six years United States pension examining surgeon; died suddenly at his home, August 9, aged 74.

Joseph Eichberg, M.D. Miami Medical College, Cincinnati, 1879; a member of the American Medical Association; for sixteen years professor of theory and practice of medicine in Miami Medical College; and for twenty-five years visiting physician to the Cincinnati Hospital; a member of the Cincinnati Society for Medical Research and Cincinnati Academy of Medicine; and one of the most prominent practitioners of the city; was drowned August 18, while fishing in Big Tupper Lake, N. Y., aged 49.

Charles McCutcheon, M.D. Rush Medical College, Chicago, 1886; a member of the American Medical Association; for seventeen years resident physician and superintendent of the Fannie C. Paddock Memorial Hospital, Tacoma, Wash.; formerly president of the Washington State Medical Association; one of the best-known practitioners of the north Pacific Coast; died suddenly at Tacoma, August 10, from accidental poisoning by methyl salicylate, taken in mistake for sodium salicylate, aged 46.

Peter Evans Hines, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1852; a member of the Medical Society of the State of North Carolina; surgeon in the Confederate service during the Civil War; once president of the state medical society and surgeon general of the state; died at his home at Raleigh, N. C., August 14, aged 80.

John T. Irion, M.D. University of Nashville (Tenn.) Medical Department, 1872; a Confederate veteran; for fifteen years editor of the Paris (Tenn.) *Post Intelligencer*; postmaster of Paris for four years; died at his home in that city, August 9, from disease of the lungs, after an illness of several years, aged 71.

James P. H. Dunn, M.D. University of California, Medical Department, San Francisco, 1888; a member of the American Medical Association and Pacific Association of Railway Sur-

geons; head of the Oakland Central Hospital; and surgeon to the Southern Pacific Hospital Association at Oakland; died August 13, at the East Bay Sanitarium from skull fracture, two hours after being thrown from a horse, aged 48.

Eli Conn, M.D. University of Wooster, Medical Department, Cleveland, 1876; a veteran of the Civil War; probate judge of Butler County, Ohio, for four years; health officer of Akron; from 1882 to 1884 a member of the house of representatives; and in 1896 elected state senator; died at his home in South Akron, August 7, from cerebral hemorrhage, after an illness of five weeks, aged 70.

John S. Apperson, M.D. University of Virginia, Department of Medicine, Charlottesville, 1867; a member of the Medical Society of Virginia; surgeon in the Confederate service during the Civil War; from 1891 to 1893 assistant physician at the Southwestern State Hospital, Marion; one of the leading citizens of southwestern Virginia; died suddenly at his home in Marion, August 8, aged 64.

Harmon M. Jeffords, M.D. University of Georgia, Medical Department, Augusta, 1900; a member of the American Medical Association, and president of the Worth County Medical Society; local surgeon of the Atlantic Coast Line Railroad; died August 15, at his home in Sylvester, Ga., after a short illness, aged 30.

John Albert Armstrong, M.D. Vanderbilt University, Medical Department, Nashville, 1884; Medical Department University of Nashville, Tenn., 1885; a member of the city council of San Marcos, Texas, for three years; died at his home in that city, August 11, from heart disease, after an illness of two weeks, aged 47.

Henry Arthur Duvall, M.D. Hospital College of Medicine, Medical Department Central University of Kentucky, Louisville, 1880; a member of the Kentucky State Medical Association; a specialist in diseases of the nose, throat and chest; died at his home in Louisville, August 12, after an illness of two weeks, aged 60.

Gilbert E. Corbin, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1855; a physician and dentist of St. Johns, Mich.; a member of the State Board of Examiners in Dentistry from 1888 to 1895; died at his home, August 6, from heart disease, after an illness of several years, aged 77.

Alexander J. Lowber, M.D. Jefferson Medical College, Philadelphia, 1882; a member of the American Medical Association; for several years secretary of the State Board of Health of Delaware; died at his home in Wilmington, August 12, from disease of the liver, after an illness of several weeks, aged 66.

Ira Barrows Cushing, M.D. New York Homeopathic Medical College and Hospital, New York City, 1872; a veteran of the Civil War; assistant surgeon Third Infantry, M. V. M., from 1873 to 1876; died at his home in Brookline, Mass., August 14, eleven days after an abdominal section, aged 61.

Arthur C. Halbert, M.D. Jefferson Medical College, Philadelphia, 1870; a member of the Mississippi State Medical Association; physician of Lowndes County, Miss.; was instantly killed in Columbus by the falling of the weights of the town clock in the court-house, August 15.

Stephen A. Wood, M.D. University of Vermont, College of Medicine, Burlington, 1884; a member of the Massachusetts Medical Society; for many years town physician and a member of the board of health of Bedford, Mass.; died at his home, August 13, aged 56.

John G. Rishel, M.D. Hahnemann Medical College and Hospital of Chicago, 1866; for many years a practitioner of Lewis, Iowa; fell from the roof of his house in Chickasha, Okla., August 11, and died five hours later from his injuries, aged 67.

David Nelson Patterson, M.D. Dartmouth Medical School, Hanover, N. H., 1877; a member of the Massachusetts Medical Society; died at his home in Lowell, Mass., April 23, from chronic nephritis, after an illness of two years, aged 53.

William Alexander Lash, M.D. New York University Medical College, New York City, 1868; a veteran of the Civil War; died at his home in Greensboro, N. C., August 2, from cerebral hemorrhage, after an illness of two years, aged 63.

Thomas K. Smith, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1867; for twenty years a practitioner of San Diego, Cal., died suddenly at La Jolla, Cal., August 8, from cerebral hemorrhage, aged 66.

Joel Simpson Blackburn, M.D. Medical College of Evansville, Ind., 1877; Ohio Medical University, Columbus, 1889; died at his home in Fort Worth, Texas, July 28, from injuries received six days before in a fall from his buggy, aged 60.

William Hambitzer, M.D. University of Bonn, Germany, 1848; a member of the State Medical Society of Wisconsin and a pioneer settler of the Wisconsin lead district; died at his home in British Hollow, Wis., August 10, aged 84.

Soltau Frederick Calhoun, M.D. New York University Medical College, New York City, 1895; of Stockton, Cal.; died at the Alameda (Cal.) Sanitarium, where he had gone to undergo operation, August 12, after a short illness.

Joseph Hibble, M.D. Jefferson Medical College, Philadelphia, 1855; a practitioner of Enon, Ohio, for forty-two years; died at his home in that village, August 10, from rheumatism, after an illness of three months, aged 85.

Charles E. Stipe, M.D. Southern Medical College, Atlanta, Ga., 1898; a member of the Medical Association of Georgia; was struck by lightning and instantly killed near his home in Odessadale, Ga., August 8, aged 31.

Samuel K. Snively, M.D. Jefferson Medical College, Philadelphia, 1869; a veteran of the Civil War; died at his home in Williamsport, Pa., August 11, from heart disease, after an illness of two years, aged 67.

William Kenyon Crelin, M.D. Cleveland, about 1845; said to have been the oldest physician of Missouri; died at his home in Chillicothe, August 2, from mucous enteritis, after an illness of ten days, aged 92.

William Woodruff, M.D. Toronto (Ont.) School of Medicine, 1857; said to have been the oldest practitioner of London, Ont.; died suddenly at his home in that city, August 11, from heart disease, aged 78.

Thomas Patrick McDonald, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1891; a member of the Medical Society of the State of California; died recently in San Francisco.

Havilah E. Hastings, M.D. Missouri Medical College, St. Louis, 1880; a member of the Kansas Medical Society; and local surgeon of the Santa Fe System at Olathe, Kan.; died February 13, aged 60.

James Easton, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1873; for fifteen years a practitioner of Wichita, Kan.; died at his home, August 11, from kidney disease, aged 70.

Wesley Peters, M.D. Hahnemann Medical College and Hospital of Chicago, 1885; died at his home in Lancaster, Ohio, August 12, from intestinal disease, after an illness of one week, aged 51.

William Wilson Hamilton, M.D. Rush Medical College, Chicago, 1884; died at his home in East Liverpool, Ohio, August 5, from nephritis, after an illness of more than two years, aged 46.

Schuyler Wade Mahan, a homeopathic practitioner of London, Ont.; died at his home in that city, July 31, from paralysis, after an illness of one month, aged 71.

Tempest J. Sullivan, M.D. St. Louis College of Physicians and Surgeons, 1890; died at his home near New Frankfort, Mo., August 5, after a short illness, aged 40.

Emory Walter Crowe, M.D. University of Maryland School of Medicine, Baltimore, 1908; of Baltimore; was drowned at Ocean City, Md., August 2, aged 25.

Alva B. Curtis, M.D. Dallas (Texas) Medical College, 1904; died in Redlands, Cal., August 8, from tuberculosis, after an illness of nearly two years, aged 46.

William Floyd, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1881; for 45 years a practitioner; died at his home in Peru, Kan., July 25, aged 85.

Henry F. Alpers (Examination, Ill.) of Aviston, Ill.; died recently and was buried from the home of his son in Lincoln, Ill., August 7.

William Higgs Cunningham, M.D. Medico-Chirurgical College of Philadelphia, 1904; died recently at his home in Shiloh, N. J.

Thomas A. Glasgo (License, Ind., 1897); an old practitioner of Brazil, Ind.; died at his home in that city, August 8, from paresis.

Anthony White, M.D. Rush Medical College, Chicago, 1890; of Excelsior Springs, Mo.; died April 20, aged 62.

Society Proceedings

COMING MEETINGS.

New Mexico Medical Society, Albuquerque, Sept. 2-3.
Washington State Medical Association, Walla Walla, Sept. 2-4.
South Dakota State Medical Assn., Yankton, Sept. 2-4.
Medical Society of the Missouri Valley, Council Bluffs, Sept. 3-4.
Colorado State Medical Society, Denver, Sept. 8-10.
Med. Soc. of the State of Pennsylvania, Cambridge Spgs., Sept. 14-17.
American Assn. of Obstet. and Gynecol., Baltimore, Sept. 22-24.
American Dermatological Association, Annapolis, Sept. 24-26.
Kentucky State Medical Association, Winchester, Sept. 23-25.
Con. of State and Prov. Bds. of N. A., Washington, Sept. 25-26.
Internat'l Congress on Tuberculosis, Washington, Sept. 21 to Oct. 12.
Nevada State Medical Association, Goldfield, Oct. 6-7.
Minnesota State Medical Association, St. Paul, Oct. 7-8.
Idaho State Medical Association, Boise, Oct. 8-9.

MICHIGAN STATE MEDICAL SOCIETY.

Forty-third Annual Meeting, held in Manistee, June 24-25, 1908.

(Continued from page 699.)

Treatment of Chronic Heart Diseases by Carbonated Mineral Baths and Exercises.

DR. W. L. WILSON, St. Joseph, described the five types of bath given at Bad Nauheim. He mentioned the methods ordinarily used in administering these baths artificially and objected to them on account of the gas being evolved too rapidly, subsiding too quickly, and not being thoroughly mixed with the water. His method was to dilute the St. Joseph mineral water with plain water and add carbonic acid gas from a carbonator. Nine parts of plain water must be used to approximate the *sool Bad* of Nauheim and corresponding amounts for the other varieties. The St. Joseph water contained sulphuretted hydrogen, which, in his opinion, enhanced the effect of the carbonic acid gas. In addition to the baths, graded exercises were given, the diet regulated and the amount of fluid ingested restricted to three pints in the 24 hours. This treatment was indicated in all functional cardiac troubles, myocarditis, fatty heart, angina pectoris, and in all forms of loss of compensation due to valvular disease or dependent on muscular changes.

Distinction Between Hysteria, Neurasthenia, Hypochondria and Simulation.

DR. CARL D. CAMP, Ann Arbor, called attention to the liability of confusing these conditions and to the means of differentiating them. In hysteria there were the so-called accidents, which were transient phenomena—e. g., paralysis, convulsions, emotional outbursts, etc.—and the stigmata, which were permanent manifestations—e. g., concentric contraction of the visual fields, reversal of the color fields, anesthesia of conjunctiva, pharynx or skin (not corresponding to nerve distribution), mental characteristics, etc. In neurasthenia there was always history of a mental or physical strain too great for its victim's organism to endure; the patient was fatigued in body and mind, had fatigue pains (as backache), lack of mental concentration, loss of memory, irritability and increased reflexes. There were no manifestations like the accidents or stigmata of hysteria. In hypochondria the patient believed he was ill when he was not; he attributed to himself symptoms that he had seen, heard or read about, but had no signs of hysteria or neurasthenia. In simulation, the patient had some ulterior purpose and was rarely able to carry out a well-feigned series of consistent manifestations.

Hypertrophic Stenosis of the Pylorus.

DR. W. M. DONALD, Detroit, recapitulated the symptoms of this comparatively new disease, or rather of the disease recently described by the caption of "Hypertrophic Stenosis of the Pylorus." He emphasized the fact of its occurrence largely in males (about 80 per cent.), referred to the valve-like arrangement of the pylorus, caused by the folds of the mucous membrane during spasm, and showed a specimen in which a pencil could be readily introduced through the pylorus, but in which fluid could not be forced into the duodenum from the stomach, on account of the folds of the mucous membrane in the pylorus. He asserted the comparative rarity of the disease by the statement that in the Great Ormond Street Hospital for Sick Children, in London, only 39 cases were reported in ten years; but likewise asserted that many cases were overlooked in private practice through lack of familiarity of the ordinary practitioner with the symptoms of this disease. He reported four cases, occurring in one family during the past eleven years, two of them being demonstrated postmortem, and all of the patients except one dying within a week of birth; the third lived for five months and finally died of inanition. He believed the record of four cases in one family to be unique in the history of this disease. Of the four, two patients were males and two females.

Diet and Digestion.

DR. F. J. GRONER, Grand Rapids, emphasized the too prevalent neglect of dietetics by physicians in their employment of therapeutic agencies. The habits of eating among civilized beings were accountable for many acute and chronic disturbances, not only gastrointestinal, but constitutional, diathetic, circulatory, and visceral diseases. Insufficient mastication, over-feeding and under-feeding, irregular and too short meal-intervals, improper cooking, the choosing of vicious food articles, the disregard of nutritive values, unwise exertions as related to meals, vicious habits of fluid intake—all these were factors so widespread that they were seldom given any thought. It should be the physician's duty to inquire into habits of diet and try to know and advise correct methods.

The Country Surgeon.

DR. H. B. GARNER, Traverse City, in his chairman's address to the Surgical Section, emphasized the rôle which the country practitioner plays in surgical work. In America certain operations were first performed by country surgeons, as, for instance, Bradshear of Kentucky, who did the first hip-joint amputation; Levert of Louisiana, who first used the metallic ligature; Stephens of St. Croix, who first ligated the internal iliac; White of New York State, who first tied the common iliac; Deveric of Tennessee, the first to remove the lower jaw; Evans of Traverse City, who first successfully operated for spina bifida; MacDowell of Kentucky, whose ovariotomy was the first done in any country. The city specialist is apt to underestimate his rural brethren and to decry their attempts to do surgery, but many emergency operations must be done by the general practitioner, even including laparotomies, and occasionally a man of force and aptitude attained great surgical skill.

Drainage Following Cholecystotomy.

DR. J. J. REYCRAFT, Petoskey, asserted that drainage was too often unnecessarily used after cholecystotomy. Many operators invariably drained, and the majority drained in most instances; but there were many cases in which the mucous membrane of the gall bladder was healthy, as evidenced by its normal appearance, and in which the bile is non-infectious, even when many concretions were present. In such cases, if the common duct be patent, the author advised closing the gall bladder and the abdominal wound without drainage. Observance of this rule would result in the closure of two-thirds of cholecystotomy wounds, with an accelerated convalescence and a diminution of the postoperative hernias. If an occasional error were made in thus closing wounds, it would be easy to operate a second time and remedy the mistake. He suggested that when drainage is necessary a soft rubber tube is the only means advisable; cigarette drains and gauze are never to be used, according to his experience.

Discussion of this paper elicited a wide divergence of opinion.

Acute Peritonitis.

DR. W. F. METCALF, Detroit, elaborated the latest ideas on history, physiology and pathology of the peritoneum and its

inflammations, quoting especially from Dudgeon and Sargent's work on the bacteriology of peritoneal infections. These recent ideas had profoundly influenced methods of diagnosis, prognosis and treatment. One could not wait for classic signs, for treatment was then likely to be fruitless. Operation should be done as soon as diagnosis was established, and the diagnosis ought to be plain in twelve hours after the onset. It makes no difference whether the infection be local or general—an acute peritonitis should be operated on at once, unless the patient be moribund or undoubtedly improving. In the operative procedure he preferred the right rectus incision, when possible, closed any perforation that might exist, refrained from all irrigation or wiping (except removal of feces or food particles by moist gauze), used all possible expedition, and placed drainage in the dependent portions. If the process be localized, he laid a cofferdam of gauze around the focus, to be removed in from six to eight days; if this were not indicated, he drained through stab wounds by means of split rubber tubes containing gauze strips. The patient was placed in the Fowler position and normal saline solution given continuously by rectum. He has seen no benefit in these cases from opsonic therapy; he believed in the use of morphin in after-treatment, when there is restlessness and pain, especially in children; he seldom used a cathartic before the fifth day. If mechanical or paralytic obstruction developed, he performed a secondary laparotomy, releasing the bowel or doing enterostomy.

Appendicostomy.

DR. J. A. MCMILLAN, Detroit, called attention to the value of appendicostomy in treating severe and obstinate cases of amebic dysentery, mucomembranous colitis, and syphilitic ulceration of the colon, all of which were resistant to ordinary methods of treatment. Other surgical procedures, such as extirpation of the colon, colostomy, and cecostomy, were beneficial, but difficult and dangerous, and accomplished no more than appendicostomy, which had the advantage of being simple, safe, efficient, clean, and could be easily closed when desirable. The method is especially indicated in colonic diseases, but its value decreased in proportion as the disease descended toward the rectum, so that sigmoid and rectal affections were better treated by rectal irrigations. After appendicostomy was performed, a rubber tube could easily be introduced into the cecum and fluids injected as indicated; usually irrigations once a day or once in two days would suffice. The technic of the operation and the methods of irrigation were fully described.

Chloroform Anesthesia.

DR. R. M. GUBBINS, Ceresco, claimed that the proper care in the administration of chloroform made it a safe, convenient and pleasant anesthetic. He dwelt on the need of giving minimum dosage, the use of strychnin for weak heart muscle, morphin and atropin when indicated, due regard for the patient's comfort, both mental and physical, an accurate knowledge of the condition of all important viscera, and the employment of suitable contrivances for administering the anesthetic. He criticized adversely the ordinary Esmarch inhaler and most of its modifications, also the complicated apparatus for combining chloroform, oxygen, etc., in definite percentages, and offered for consideration a mask of his own design, higher than the Esmarch, with perforations of the gauze covering. He mentioned the parenchymatous degenerations produced occasionally by chloroform and admitted that at present there was no way to obviate their occurrence.

Acute Toxemia After Chloroform Anesthesia.

DR. F. W. HEYSETT, Freesoil, said that many practitioners who use anesthetics were apt to think their patients out of all danger from the anesthetic as soon as its primary effect had worn off. But it must be realized that not only do pneumonias occur, but after chloroform especially there occurred a form of acute toxemia, due to parenchymatous degeneration of the liver, kidneys and other organs. The symptoms of this toxemia occurred from 10 to 150 hours after anesthesia and comprise feelings of distress and anxiety, restlessness, delirium or stupor, nausea, vomiting, jaundice, convulsions, coma, scanty urine containing acetone, cyanosis, labored breathing, petechial hemorrhages, rise of temperature, rapid pulse. Mild cases were common, exhibiting only a few of these signs in a slight degree. The condition occurred oftener in females than in males, and the majority of deaths occurred in children under 10; a condition of exhaustion from any cause predisposed to the toxemia. A case was reported in detail.

Preliminary Report on the Use of Tubercle Residue in Surgical Tuberculosis.

DR. J. W. VAUGHAN, Detroit, reported 16 cases of surgical tuberculosis in which Vaughan's tubercle residue had been used, usually in conjunction with other methods of treatment. The residue was the product obtained by washing a large amount of dead germ substance with water, salt solution, alcohol and ether, then heated with sodium hydroxid and alcohol, which split the germ substance into a toxic portion, soluble in alcohol, and a non-toxic portion (the residue) insoluble in alcohol. The cases included tuberculous peritonitis, tuberculous kidney, psoas abscess, glands of neck, joint infections. He stated that his patients showed an undoubted beneficial effect from the bacterial therapy; that this was probably brought about by the formation of an enzyme in the blood, which reacted chemically with the tubercle bacillus so as to injure or destroy it. The total leucocyte count was not changed, but the differential count showed an increase of from 15 to 20 per cent. of polynuclear forms.

Diverticulum of the Esophagus.

DR. H. O. WALKER, Detroit, spoke of the two classes of esophageal diverticula: First, the "traction" variety, produced by a pull from without, usually by inflammation; these were usually small and gave very slight symptoms. Second, the pressure diverticula, produced by intraesophageal pressure, either congenitally or secondary to trauma or stricture. This variety gave serious symptoms, including choking, nausea, regurgitation, and inanition. Sometimes the diverticulum first filled with food and then food would pass by into the stomach, or food could be taken only in certain positions; occasionally the sac could be emptied voluntarily by vomiting, or it might require pressure; there might be pain after eating; in a few cases the decomposition of food in the sac gave rise to fetid breath. All these points, together with the bismuth-*x*-ray examination made the diagnosis definite. Prognosis was poor, death usually resulting from starvation, aspiration pneumonia, or phlegmon secondary to perforation. The treatment consisted in operative measures. He reported a case thus treated successfully. The mortality of the modern operation was very small.

Nerve Involvement in Fractures of the Extremities.

DR. CARL S. OAKMAN, Detroit, said that nerve injury at the time of fractures, or during reduction, retention or formation of callus, was an uncomfortable complication which could be effectively treated if recognized. Often, however, the circumstances of fracture accidents and their treatment led one to overlook nerve involvement and then the problem was increased in difficulty. Injuries to nerves of the upper extremity occurred far oftener than those of the lower, and the musculospiral was affected more often than any other nerve. The nerve was either contused, lacerated or entirely divided, most frequently the second. The symptoms of division of mixed nerves were anesthesia and motor paralysis, followed by atrophy, trophic and inflammatory skin changes, and occasional joint lesions; in laceration the symptoms partook of the above details in proportion to the extent of the injury. In contusion also the same symptoms existed, but usually milder and of limited duration, tending to spontaneous recovery. Pressure of a nerve by growing callus gave rise to paresthesia, hyperesthesia and muscular twitchings, followed by paralytic manifestations. In every case of fracture the physician should test the skin sensations before applying retentive dressings in order properly to treat nerve complications if they exist. Prompt recognition and intelligent measures might save months of inconvenience and possible lawsuits. Elec-

trical tests for degenerative muscle changes were helpful. Avoidance of violent manipulation in reducing fractures and dislocations would prevent a few nerve injuries, and careful watching of the position of fragments would sometimes forestall the pinching of nerve trunks.

Bloodless Operation for Internal Hemorrhoids.

DR. L. J. HIRSCHMANN, Detroit, described his technic as follows: A hypodermic dose of morphin is given twenty minutes before operation, the bowel is washed out with a suds enema and boric acid irrigation; the patient assumes the Sims lateral position, the parts are shaved and cleansed, and then anesthetized locally by hypodermic injection of from 20 to 60 minims of beta-eucain lactate solution, previously sterilized by boiling strength from 0.1 to 0.5 per cent. The sphincter is dilated to whatever extent is necessary (usually not much), the hemorrhoids exposed and individually anesthetized; a ligature carrier armed with No. 2 catgut is passed through the mucous membrane at the base of the pile and so directed as to half encircle the pedicle submucously and emerge at the opposite side; the ligature is tied snugly, thus effecting a ligation of the whole blood supply and only one-half of the mucous membrane. An analgesic suppository is given and the patient put to bed. Pain may persist for twenty-four hours, due to swelling. Inside of four weeks the piles thus ligated shrink and disappear, or the "nub" can be cut away. If there is no indication for haste, the pile can be removed at time of operation, leaving the wound to heal by granulation. He claimed that the procedure is recommended by its simplicity, brevity, safety and lack of hemorrhage.

Clinical Aspects of Prostatitis.

DR. F. W. ROBBINS, Detroit, made a report on the clinical aspects of prostatitis, based on his last 200 cases. Some of these patients were seen but a few times in consultation, so that complete statistics regarding duration, length of treatment, etc., were not attempted. About 5 per cent. had a negative venereal history. Masturbation was the probable cause in a few cases, while the influence of exposure to cold and dampness could be traced in others. A well-defined group was that traced to sedentary life, with overindulgence in eating and drinking. None of the patients was operated on, although the author was constantly on the lookout for cases suitable for prostatotomy. The symptoms of prostatitis were not always clean-cut. A patient with a history of gonorrhea or sexual excesses, complaining of precipitate ejaculations with less seminal fluid than formerly, and speaking of "loss of manhood" was apt to be suffering from prostatitis. Nervousness, dyspepsia and loss of weight were frequently present. The recurrences so often seen in gonorrhea were often due to prostatitis. Whenever the seminal vesicles were inflamed there was also inflammation of the prostate. Instrumentation was rather for the purpose of excluding diseases of the urethra and bladder than for any information it might give regarding the prostate itself. Digital examination by rectum and microscopic examination of the prostatic fluid were the only reliable means of diagnosis. The author believed that with proper treatment the prognosis was good. Most patients might safely marry. Heat and cold by rectum, laxatives, rest in bed and sedatives were indicated.

Conservatism in Surgery of the Uterine Adnexa.

DR. G. VAN A. BROWN, Detroit, reviewed the progress of gynecology toward conservation of the female reproductive organs, and emphasized the necessity of leaving in the pelvis as much functitionating material as possible. In operations on the ovaries for Graafian follicle or corpus luteum cysts, for hematoma, fibroid tumor, dermoid, prolapse, healthy tissue could be left intact. In operations for tubal pregnancy, adhesions, sometimes in inflammatory lesions, normal ovarian tissue could also be left unmolested. The tube should not be excised unless its value was destroyed by certain myomata, tubal gestation, hydrops, inflammation. Acute salpingitis should not be operated on. The author suggested that women who have had conservative pelvic operations should favor impregnation by assuming the erect or the Fowler's position after coitus, so as to make the ovum more likely to gravitate to the Fallopian current. He described cases and technic of operation.

Hydramnios: Its Etiology and Significance.

DR. J. E. DAVIS, Detroit, said that the origin of an excessive amount of amniotic fluid might be either fetal or maternal, or in rare instances from both sources. The cases of fetal origin were believed to be caused by circulatory disturbances, excessive urinary secretion, increased skin activity, serous inflammation of the amnion, deficient absorption, increased activity of the chorion and toxic substances in the fetal blood. The maternal causes were anemia, dropsy, leukemia and syphilis, all conditions leading to venous stagnation, and loss of tone of the uterus. He reported three cases illustrative of the etiology, variety and clinical significance. In his experience the condition was more frequent than one would gather from the literature. Case 1 was in a v-para. The fluid measured 12 liters and the cause was not determined. Case 2: The eleventh child was hydrocephalic and stillborn. Three weeks before delivery there was edema and marked increase in the size of the abdomen. Manual dilatation was performed with version. Two months afterward hysterectomy was done for pelvic inflammatory disease. Case 3: A primipara, at the eighth month of pregnancy, began to have edema of feet, legs and thighs. The urine was normal. The membranes were punctured and 10 liters of fluid allowed slowly to drain away. Labor set in and four hours later forceps were applied. The child died in thirty-six hours and at autopsy syphilitic lesions of the liver and lungs were found, which lesions suggested high blood pressure in the cord, the probable cause of the hydramnios.

Early examination of every pregnant woman should be made. Syphilis was a more frequent cause than was now recognized. Premature labor should be brought on as soon as the child's interests were safely conserved. Uterine hemorrhage and inflammation were thus limited.

Early Diagnosis of Carcinoma of the Uterus.

DR. J. H. CARSTENS, Detroit, said that it was well to have it well fixed in the mind that cancer, at its beginning, was a local disease, that at some time it was microscopic and that at some time in its course it was absolutely local and could be thoroughly removed. A crusade against cancer similar to that against tuberculosis should be begun. Physicians some times neglect cases of uterine bleeding; every woman in the cancerous period of life showing the slightest symptoms should be carefully examined. Excessive flow at the time of the menopause meant trouble and was not a normal manifestation of the climacteric. A discharge in a woman formerly free from it was an ill omen, and loss of weight and strength were important symptoms. The necessity of curettage and microscopic examination of the scrapings was dwelt on. Thoroughness of examination and early diagnosis were the necessities for a decrease in the frightful cancer mortality. The author proposed a cancer circular in which were given the signs by which a woman might know that she was in danger.

A Case of Obstetrics with Sequelæ.

DR. W. P. MANTON, Detroit, described the case of a primipara, aged 35, with previous history of pyelitis, who was taken with eclampsia in the eighth month of pregnancy; she had four convulsions and the urine was loaded with albumin. She was anesthetized, the cervix manually dilated, and the fetus extracted by forceps. The child lived only four hours. Both the cervix and perineum were torn, but only the latter was repaired at the time, on account of the patient's poor condition. On the third day after delivery a vesicocervical fistula developed, and within two months an attempt was made to repair it. After twelve days it reopened, but was much smaller. Six weeks later the woman experienced menstrual pain and again a month later. Shortly after this another operation was done. The uterus was found enlarged to the size of a three months' pregnancy, due to atresia of the cervical canal and retained menses. The uterus was evacuated, another plastic operation done to relieve the fistula and

prevent repetition of the atresia, and this was followed by complete recovery, and the restoration of normal menstruation.

Toxemias of Pregnancy: Etiology and Pathology.

DR. W. H. MORLEY, Detroit, said that the etiology of these toxemias was still unsettled, and that, therefore, many theories existed. The conditions might be due to hepatic insufficiency before or after conception, or to toxins circulating in the blood due to faulty elimination, or to aberrant chorionic and other fetal elements. The severe and mild hyperemesis, the other vague symptoms of toxic affections, and the various grades of renal trouble, including eclampsia, were all probably different manifestations of a common causation. The pathologic changes consisted in tissue destruction, mild or severe, according to the degree of toxemia. Liver, kidneys and spleen were the organs most often and markedly attacked; there might be simple degeneration, or atrophy, or necrosis and hyperplasia of connective tissue elements. The thyroid was often hyperplastic.

Toxemias of Pregnancy: Diagnosis and Treatment.

DR. H. E. RANDALL, Lapeer, stated that the diagnosis of the toxemias rested on recognition of certain symptoms, such as nausea, vomiting, epigastric pain, headache, edema, together with detection of diminished urea, albuminuria, casts and increased blood pressure. Convulsions might come on suddenly without premonitory symptoms. If the toxemia were accompanied by hepatitis there might be stupor, coma, black vomit, biliuria, and rapid respiration. Acute yellow atrophy of the liver should be called either pernicious jaundice or icterus gravis; its most frequent occurrence was in pregnant women, as a severe phase of toxemia. In treatment of toxemias of gestation the first indications were elimination and lowering of blood pressure; for the former, use catharties, diaphoretics and diuretics; avoid morphin. To lower blood pressure use nitroglycerin, the nitrites, veratrum, or venesection. Administer chloroform to control convulsions. If severe cases do not respond to these means, terminate labor at once.

Medicolegal

Calling of Physician as Witness Waives Privilege as to Prior Examinations.

The Supreme Court of New York, Appellate Division, Second Department, says that the serious question in the personal injury case of Marquardt vs. Brooklyn Heights Railroad Company was the extent of the plaintiff's injuries. She called as a witness a physician who attended her after the accident and who testified that he treated her for a nervous condition. The defendant's counsel elicited from the witness on cross-examination the fact that he had treated the plaintiff for nervousness before the accident. The evidence was at first objected to as incompetent and inadmissible, and the trial court was about to sustain it on the ground that it was privileged, when the plaintiff's counsel stated that he was not claiming privilege, whereupon the defendant's counsel was allowed to proceed with the cross-examination until finally, after some dialogue between court and counsel, the court stopped the cross-examination in reference to the plaintiff's condition prior to the accident, and struck out all of the testimony of the witness on that subject, on the ground that the witness was precluded from testifying by Section 834 of the New York Code of Civil Procedure. The Appellate Division holds that this was error.

By calling the physician as a witness the court says that the plaintiff waived her privilege. Permitting a witness to be sworn and examined without objection is an express waiver, and a waiver once made can not be recalled.

In this case the plaintiff, the court says, had not only called the witness and examined him in reference to her condition after the accident, but counsel during the cross-examination had expressly stated that he did not claim the privilege as to examinations made by the witness prior to the accident. The court thinks that, by calling the physician and examining him in reference to her condition after the accident, the plaintiff waived her privilege as to prior examinations, and it was permissible for the defendant to show by cross-examination that the condition testified to by the witness existed prior to the accident. If the plaintiff desired the shield of the statute, she should not have called the physician as a witness. When she did so, she opened the door to any inquiry relevant to the fact in issue concerning which the witness had testified.

Corporations Not Liable for Medical Services Rendered with Approval of President.

The Supreme Court of Indiana says that it was averred in the case of Cushman vs. Cloverland Coal and Mining Company that an employé of the defendant company, while at work for it, was personally injured, his wounds being of so serious a nature as to create an emergency for the immediate attention of a physician and surgeon in order to save his life, by reason whereof the plaintiff was called and employed to attend and treat him, by the defendant, by and through its mine superintendent, etc. But that was not all. The complaint showed further that, on the employment of the plaintiff by the mine superintendent, the latter immediately reported the fact to the defendant's president and general manager, who, as such officer, with full knowledge of the employment of the plaintiff, ratified and confirmed the same by expressing his approval, and by requesting the plaintiff to supply the injured employé with necessaries. So that the question of the sufficiency of the plaintiff's complaint, or right of recovery, really rested on the ratification by the defendant, acting through its president and general manager, rather than on the power of the mine superintendent to make the employment.

Ratification can only be made by one who has power to make the contract in the first instance. If the president and general manager had authority, either express or implied, from the defendant's board of directors to employ the plaintiff to render the services sued for on behalf of the corporation, then he could, no doubt, give validity by ratification to the superintendent's contract.

The naked act of investing the individual with the office of president gives him very little power to act for the corporation. He has no power to bind it in material matters, except as he may be authorized by law or by the board of directors.

Another general rule, apparently of universal acceptance, is that officers of corporations organized for and engaged in commercial pursuits, without special authority, can not, as a legal right, charge the corporation with the employment of physicians and surgeons to attend on sick or injured employés. The rule is even applicable to railroad companies.

No court, this court thinks, has gone so far as to hold that even the general manager of a railroad may, on behalf of the company, engage generally in providing medical aid to sick and injured employés and passengers, especially where it is not shown that the sickness or injury was the result of the company's negligence.

A modified exception to the rule applicable to railroad companies is generally recognized, founded on the exceptional characteristics and hazards of their operation. Employés of railroad companies, particularly trainmen, are called on to perform their duties along the line of the railroad, extending many miles. When on duty they are constantly away from home, often remote, among strangers, and beyond the quick reach of family and friends. In such cases, when the employé becomes seriously ill, or suffers a severe injury, and he has available neither family, friends nor credit, nor ability to provide for himself the care and medical assistance his condition imperatively demands, the dictates of humanity cast on the employer, as the one nearest in obligation, the duty to provide, during the continuance of the emergency, whatever is immediately and urgently required for the preservation of life and limb. It is only when there is no relative or friend present willing to help the sick or injured employé at a time of urgent necessity that the duty and authority rests on the employer, acting by its highest representative present to render assistance. Some one must serve the helpless man, and the law devolves the duty on the master rather than on a

stranger. The duty arises with the emergency and ends with it.

But this exception relating to railroads had no bearing on the question before the court. The defendant was a coal mining company, a strictly private corporation. Its business was stationary. Its employés performed their duties in one general working place, near their homes, family, friends and acquaintances, and had all the facilities for hastily summoning medical and other aid, in time of pressing emergency, as might be possessed by the corporation.

There is no greater or different reason for holding a private mining corporation responsible for supplying medical aid for its employés than appertains to all kinds of manufacturing bodies, and the court perceives no reason why either class of corporations, under ordinary circumstances, should be required to furnish their workmen with medical service any more than they should be required to furnish them with their dinner. The policy of the law is to protect the employé, equally with the employer, in the fullest freedom of choice in supplying his personal wants of every kind, whenever he is as capable and well prepared as his employer to act for himself.

The court does not, however, hold that a case can not arise with a mining or manufacturing company, or even with an individual, wherein the facts may be so unusual and extreme as to impose on the employer a duty analogous to that imposed on railroad companies. But no such case appeared under the facts alleged in the complaint. "It was alleged in the complaint that the defendant was a corporation organized for and engaged in the business of mining coal; that the plaintiff was personally injured while at work for the defendant as one of its employés. There was no averment that either the mine superintendent, or the president and general manager, had received authority from the corporation to contract for, or to ratify the employment sued on, either expressly or by implication. The court was not informed even of the nature of the employment, whether as engineer, blacksmith, miner or other particular service. Neither was it informed of the nature or extent of his injury, nor the facts that created the emergency that imposed on the coal company the duty of employing the plaintiff. It was not averred that the injured employé was unable to help himself, or that he had no money, or credit, or family, or friends present to give him assistance, nor was it shown by the complaint that there existed any other reason why he was not as able and competent to speedily summon a physician as the company. The averment that the injured party's wounds were so severe as to create an emergency for the immediate attention of a physician and surgeon in order to save life was but pleading the baldest conclusion. Facts, and not conclusions, must be stated. The essential facts that should appear in support of a justifiable emergency were absent, and, as in all other cases, the court must, in testing the sufficiency of the pleading, assume such absent facts to be adverse to the pleader, under the general presumption that a party will set forth all the facts favorable to his case.

There was no error in sustaining a demurrer to the complaint in this case.

Procedure Before State Board of Health and Revocation of License for Criminal Abortion.

The Supreme Court of Nebraska holds, in Munk vs. Frink, that a complaint filed before the State Board of Health for the purpose of procuring an order revoking the license of a physician is sufficient if it informs the accused, not only of the nature of the wrong laid to his charge, but of the particular instance of its alleged perpetration. And in a trial under such a complaint it is not necessary that the proceeding should be conducted with that degree of exactness which is required on a trial for a criminal offense in an ordinary tribunal of justice.

Proceedings by the State Board of Health to revoke a physician's license for cause are summary in their nature and are triable before the board without the intervention of a jury. A trial and conviction in a court of competent jurisdiction is not a condition precedent to a proceeding by the State Board of Health against a physician to revoke his license for any of the causes provided by statute.

The power conferred on the State Board of Health to revoke a physician's license for cause is an administrative and not a judicial function, and the limit of judicial interference in such cases is to protect the accused in his right to a hearing on specific charges after reasonable notice of the time and place of hearing has been given and a full opportunity afforded him to present his defense to such charges and against a conviction, unless on competent evidence. And in such a case, when the State Board of Health has so proceeded and taken testimony, and has given the respondent full opportunity to appear in person or by counsel to cross-examine the witnesses against him, and to introduce testimony in his own behalf, and has passed on the sufficiency of the evidence so taken, the findings of the board as to the sufficiency of the evidence to sustain the charges will be upheld, unless it appears that there is no evidence to sustain such findings.

In a hearing by the State Board of Health of charges against a physician for procuring or aiding or abetting in procuring a criminal abortion, it is not necessary to either allege or prove that the woman had become quick. It is not the murder of a living child which constitutes the offense, but the destruction of gestation, where such destruction is not necessary in order to preserve the life of the woman. The moment the womb is instinct with embryo life and gestation has begun the crime may be perpetrated.

The Supreme Court Commissioners say in this case that the section of the statute under which the proceedings in this case were had defines "unprofessional and dishonorable conduct," and includes "the procuring or aiding or abetting in procuring a criminal abortion" in that definition. This definition was assailed as "a profound legal bizarrerie," counsel saying that the author of that definition "should be immortalized as an apostle of the incongruous." But the Commissioners are unable to concur in this severe criticism of the author of the section of the statute under consideration or of the definition referred to. If "the procuring or aiding or abetting in procuring a criminal abortion" is not "unprofessional or dishonorable conduct" in one holding a certificate entitling him to practice medicine, then the Commissioners are unable to conceive of any conduct of which such person might be guilty which could be called unprofessional or dishonorable.

With regard to the contention that a sufficient complaint of unprofessional or dishonorable conduct within the meaning of the statute must, in apt terms, charge the criminal destruction by the accused, either as principal or accessory, of a vitalized human fetus, the Commissioners say that authorities are not wanting to sustain this contention, but the doctrine of the Supreme Court of Pennsylvania, in Mills vs. Commonwealth, 13 Pa., 632, is preferred. If the theory contended for should be sustained, it would be practically impossible to convict an abortionist for any abortion, or attempted abortion, during the first five months of pregnancy, for, if gestation had not proceeded to the period of quickening, there would be no way of disputing the testimony of the abortionist that what he removed from the woman was, in fact, a dead fetus. Even the woman herself could not dispute this testimony prior to pulsation following the quickening period. It would be giving unlimited license to the abortionist to ply his nefarious calling, provided he confined his criminal operations to the early months of gestation. The Commissioners prefer to be in line with the Supreme Court of Pennsylvania, and say, although it has been so held in Massachusetts and some other states, it is not the law "in Nebraska," and never ought to have been the law anywhere.

No error is found in this case in the revocation of the appellant Munk's license as a physician.

In the companion case of Walker vs. McMahan, the Commissioners say that it was true that the appellant Walker acted as assistant only to Dr. Munk in performing the operations complained of, but the evidence showed such a concert of action between these two doctors in these and other cases of a similar nature, and such a ready and unquestioning participation by the appellant Walker with Dr. Munk in the performance of the two operations involved that there was no escape from the conclusion that if one were guilty both were.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Boston Medical and Surgical Journal.

August 13.

1 *Prophylaxis in Surgery. R. J. Pye-Smith, Sheffield.
2 *Immediate Treatment of Serious Ocular Conditions Frequently First Seen by the General Practitioner. F. E. Cheney, Boston.
3 Excision of the Os Innominatum. Arthrodesis of the Sacro-iliac Synchondrosis. C. F. Painter, Boston.
4 General Therapeutics of Gastric Affections. M. V. Tyrode, Boston.
5 *Examination of One Hundred Eye Cases in the Dedham Public Schools. R. W. Place, Boston.

1. See Foreign Abstract No. 3, p. 794.

2. **Ocular Conditions and the General Practitioner.**—Cheney discusses certain grave diseases of the eye that are usually first seen by the family practitioner, and for which he must be prepared temporarily to assume the responsibility for treatment. In acute glaucoma the immediate treatment demanded is a miotic to contract the pupil and to relieve symptoms temporarily, pending an iridectomy. He recommends beginning with two or three drops of a 2 per cent. pilocarpin nitrate solution, instilled into the eye every half hour. If that fails, a 1 per cent. solution of eserin sulphate may be used with equal frequency. Morphin may be advisable for the pain and an early saline cathartic is beneficial. He next discusses iritis, and incidentally mentions, as a point hitherto unnoticed in the literature, that "supraorbital pain is not infrequently absent, or at least very moderate until atropin is used, when it may become severe, and so continue until the inflammation begins to subside." It is necessary to caution the patient of this, and not to discontinue the remedy on this account, because the one objective of treatment is as wide dilatation of the pupil as possible. Leeches to the temple are often of great use, especially when intense congestion rather than adhesions is the cause of the failure to dilate. Ophthalmia neonatorum is next discussed, and finally perforating wounds of the eyeball. As emergency suggestions in the last-named cases, Cheney orders thorough cleaning and irrigation of the conjunctival sac, with boric acid or other mild solution to lessen chances of infection; dilatation of the pupil with 1 per cent. atropin three or four times at four-minute intervals to prevent adhesions and check likelihood of iritis; some simple ointment applied to the eye. He recommends White's ointment:

R.	gm.		
Hydrargyri bichloridi	.005		gr. 1/12
Sodii chloridi	.03	or	gr. ½
Petrolati	16		5iv

Epsom salts or other active cathartic and a leech to the temple are also recommended.

5. **Eye Conditions in Public Schools.**—Place reports the results of an examination of the eyes of school children at Dedham, undertaken under the authority of the school committee because of the large number of cases of inability or indifference on the part of parents to attend to the matter. The figures are as follows: Number examined, 113; wearing properly fitted glasses, 21; wearing improper glasses, 16; recommended to wear glasses, 47; not needing glasses, 29. Three far-sighted children had been fitted with near-sighted glasses by opticians. Place particularly cautions that "young children with two, three and even four diopters of hypermetropia can sometimes read the usual amount at a distance, and these must be watched for inability to read their books for any length of time without having the vision blur or the eyes ache." These children are liable to nervous symptoms.

Medical Record, New York.

August 15.

6 *Surgical Treatment of Empyema. P. T. O'Connor, Waterbury, Conn.
7 Treatment of Negligent Speech by the General Practitioner. E. W. Scripture, New York.
8 *The Hospital and the Professional Anesthetist. A. T. Bristow, Brooklyn, N. Y.
9 *Improvement of General Anesthesia on Basis of the Principle of Adapting the Boiling Point of the Anesthetic to the Temperature of the Body (Schleich)—Ten Years' Experience at the German Hospital. W. Meyer, New York.
10 Anesthesia at St. Luke's Hospital. R. Abbe, New York.
11 Administration of Anesthetics at Mt. Sinai Hospital. H. Lilienthal, New York.
12 Anesthetics at the Hospital for Ruptured and Crippled. V. P. Gibney, New York.
13 *Amputation in Diabetic Gangrene. E. H. Eising, New York.
14 Anesthesia by Chloroform and Ether. E. Pendleton, Richmond, Va.

6. **Empyema.** O'Connor discusses the operative treatment of empyema and concludes that simple incision lacks the fundamental principles of surgery, and most advanced modern surgeons do not consider it a recognized method of procedure for the surgical treatment of empyema. The established plan of procedure, which has withstood the test of time, is that laid down by Hippocrates, with the exception that Hippocrates trephined the rib to avoid injury of the intercostal vessels and nerves, while we, with a more perfect knowledge of anatomy, prefer to resect a portion of one or more ribs, thus enabling the surgeon to introduce one or more fingers, or the whole hand, into the pleural cavity, and by intrapleural manipulation to break up all adhesions, remove the large masses of coagulated lymph, and thereby accomplish a more thorough surgical operation.

8. **The Professional Anesthetist.** Bristow discusses the dangers of the modern method of anesthesia in hospitals, and submits a series of figures drawn from fifteen replies from members of the Brooklyn Society of Anesthetists to the following questions: 1. How long does it take you to induce an anesthesia? 2. How much of the anesthetic do you use in the induction? 3 How much of the anesthetic do you use in an hour? The figures include about 10,000 cases which Bristow contrasts with the figures from six hospitals covering about 900 cases. The comparison leads him to the conclusion that in hospitals ether is wasted, largely by the open method, or that the patient gets far more ether than is required, or both. He concludes that there is really just as much reason for appointing a visiting anesthetist to a hospital as for making any other professional appointment on the staff. Two things have to be provided for: the instruction of the internes and the payment of the anesthetist. The latter may be effected either by the hospital paying him a salary, which he may supplement by private work, the hospital recouping itself by a regular charge to private patients, or the anesthetist may receive his payment directly from all private patients operated on in the hospital.

9. **Anesthesia.**—Meyer discusses Schleich's method of improving general anesthesia on a physical basis by adapting the boiling point of the narcotic to the temperature of the body. He then considers the use of a combination of chloroform, ether, and ethyl chlorid, which he has used in hospital and private work for ten years and which has also been extensively used (preceded by a hypodermic of morphin) at the German Hospital. He considers that the improvement of general anesthesia, brought about on a principle of adapting the boiling point of the anesthetic to the temperature of the body, has been sufficiently demonstrated to merit the full and careful consideration of the profession.

13. **Diabetic Gangrene.**—Eising discusses the rôle of the following factors: 1, Glycosuria; 2, the acetone bodies; 3, ammonia excretion; 4, kidney complications; 5, arteriosclerosis; 6, blood pressure, and finally gives a summary of these factors in relation to gangrene. He concludes that armed with these facts determinable in any given case of diabetes we may apply them in the following manner: First, prognostically, before the occurrence of gangrene even in the presence of a high glycosuria, a marked acidosis (which means diacetic acid alone or diacetic acid and beta-oxybutyric acid), and advanced age, in the absence of arteriosclerosis and high blood pressure, we may look on the patient as being not of the type to develop gangrene. And again, from the prognostic standpoint, a patient not past forty years, with a low percentage of sugar, with no acidosis, but with an interstitial nephritis and a marked arteriosclerosis, we may look on as belonging to the type of those who may acquire gangrene.

New York Medical Journal.

August 15.

15 *Local and Surgical Treatment of Chronic Diarrhea. S. G. Gant, New York.
16 *Use of the Bronchoscope, Esophagoscope and Gastroscope. T. H. Halsted, Syracuse, N. Y.
17 *Extension, Without Use of Weights, for Fractures. C. M. Paul, Cincinnati.
18 Syphilis. G. Merzbach, Germany.
19 Preliminary Report on the Vaccine Treatment of Atrophic Rhinitis. R. H. Skillern and E. Burrill-Holmes, Philadelphia.
20 Headache and Its Cure. J. A. Donavan, Butte, Mont.
21 *Pneumonia: One Method of Treatment. E. P. Tompkins, Roanoke, Va.

15. **Chronic Diarrhea.**—Gant believes that in a vast majority of cases chronic diarrhea is due to ulcerative lesions in the colon. Medicaments, though useful in acute diarrhea, are ineffective in the form under consideration. The local treatment of colitis may be non-operative or surgical; the former includes diet control, rest and colonic irrigation. Its success depends mainly on the thoroughness with which the bowel is cleansed. The irrigation treatment is usually effective in all varieties of colitis, but it naturally takes a longer time to overcome a tuberculous form than it does other types of ulcerated colitis. When non-operative measures fail after a few weeks' or month's trial, one of the following operations may be resorted to: Resection of the colon, colostomy, appendicostomy, cecostomy with irrigation of the small intestine (Gant's operation), and intestinal exclusion. He discusses each of these in detail and prefers cecostomy and appendicostomy as being effective, not dangerous, capable of easy performance, and as leaving few if any undesirable sequelæ. Gant has no more hesitancy in advising these operations for the relief of chronic diarrhea than in recommending appendicectomy for appendicitis. Finally, he describes in detail a method of his own devising, not hitherto published, which he considers an effective way of irrigating both the small and larger intestine through the same opening in the cecum. This procedure is also useful in conditions other than diarrhea, namely, in the treatment of ordinary and pernicious anemia, autointoxication, ptomain poisoning, diarrhea of children, intestinal feeding following operations on the mouth, in stricture of the esophagus, gastric ulcer, cancer, etc.

16. **Bronchoscope, Esophagoscope, and Gastroscope.**—Halsted reports eighteen operations or examinations performed on fourteen patients; fourteen times under general anesthesia (ether in all but one), three under cocain, one without any anesthetic. The patients varied in age from a new-borne babe of two hours to a woman of seventy. In four cases the operations were for the removal of foreign bodies. In the remaining cases the operations and examinations were for growths in the pharynx and larnyx for strictures, etc. Halsted concludes that direct visual examination of the larynx, the trachea and the bronchus, down almost to the last subdivision of the bronchiole, is a practical thing and of inestimable value, not alone for the removal of foreign bodies in the lower air passages, but for the diagnosis and local treatment, both by topical applications and surgical interference, of various lesions that affect the larynx, trachea, bronchus and the lung, such as laryngeal tumors, tracheal and bronchial ulcers, tuberculous or other lesions, and lung abscesses, discovering the cause and location of pressure on the trachea and bronchus. By means of esophagoscopy the accurate diagnosis and treatment of many hitherto inaccessible diseases of the gullet becomes possible. The causes of painful and difficult deglutition, the etiology and diagnosis and localization of esophageal obstructions and stricture will depend not so much on the findings of the bougie as on the observations of the eye, aided by the probe. Through the gastroscope Chevalier Jackson has demonstrated the possibility of making a systematic and complete examination of from two-thirds to three-fourths of the stomach wall; that in many cases the pylorus can be seen and probed; that gastric ulcers can be treated locally; that early diagnosis of carcinoma can be made; that sections of tumors can be removed for microscopic examination—in a word, that the stomach, like the larynx, is subject to direct and local examination and treatment.

17. **Fracture Extension Without Weights.**—Paul describes a method of using an ordinary Bradford frame covered with a bag of strong unbleached muslin, which is so cut as to form a series of hammocks. This enables the application of a plaster dressing to be made with circular turns without handling any part of the patient. The process of applying the plaster bandages is described. The article is illustrated.

21. **Pneumonia.**—Tompkins' method he asserts to be of value only in the stage of engorgement. He considers it the rational thing to do, to endeavor to decongest the capillary vessels of the alveoli. This was the object of the old-time bleeding, but the skin is capable of containing one-fourth of the entire volume of blood. The patient, therefore, in this stage is surrounded by bricks made red hot in the fire and then put into boiling water and wrapped in a cloth. A flannel saturated in turpentine and covered by a newspaper is applied to the seat of pain. Half a grain of calomel and sodium hydroxid are given four times at two-hour intervals; and alternating with this, aconite, two minims, tartar emetic, one-fortieth grain, ipecac one-eighth grain, morphin sulphate, one-twentieth grain. He reports a case in which a rapid change took place within seventy-two hours of the time of the onset. He has no quarrel with the open-air treatment, not having had occasion to use it in pneumonia, owing to success with the treatment detailed above.

The Lancet-Clinic, Cincinnati.

August 8.

22 *Primary Melanotic Sarcoma of the Rectum and Anus. L. J. Krouse, Cincinnati.
23 Injuries at the Elbow. J. C. Larkin, Hillsboro, Ohio.
24 *Obscure Fractures Discovered by Roentgen Examination. S. Lange, Cincinnati.
25 *Cases of Reinfection with Syphilis. A. U. Williams, Hot Springs, Ark.

August 15.

26 The Doctor in Court. F. W. Langdon, Cincinnati.
27 Typhoid Fever. T. A. Dickey, Middletown, Ohio.
28 Myalgia Lumbalis. S. Lemp, Indianapolis.

22. **Primary Melanotic Sarcoma of Rectum.**—Krouse summarizes the literature of the subject and reports two cases of his own, adding a list of the cases that have been reported, with sex, age, location, duration, method of treatment, microscopic structure and results.

24. **Strain Fractures of Knee.**—Lange describes the anatomy of the knee joint, in detail as regards the ligaments, and then proceeds to consider the fracture effects of three classes of ligamentous strain, as follows: (a) Strain in the direction of hyperextension against the crucials, the posterior and the lateral ligaments; strain exerted laterally against the internal or external lateral ligaments, the knee being in extended position, which puts these ligaments in the stretch; (c) strain in a rotary direction, either in the direction of outward rotation, which is normally limited by the lateral ligaments, or in the direction of inward rotation, which is normally limited by the anterior crucial ligament. The transverse fracture of the patella is not included, as being too well known. He gives case reports with diagrams from skiagraphs of 1, Avulsion of external tuberosity of tibia; 2, avulsion of fragment from internal tuberosity of head of tibia with tearing off of small scale from internal tuberosity of femur; 3 and 4, crucial ligament fractures; and 5, a case of epiphyseal separation at lower end of femur.

25. Abstracted in THE JOURNAL, Nov. 16, 1907, p. 1707. The article was also published in the *Medical Fortnightly*, Oct. 10, 1907.

Annals of Surgery, Philadelphia.

July.

29 *Aneurismorrhaphy. Treatment of Popliteal Aneurism by the Reconstructive Method. J. F. Binnie, Kansas City, Mo.
30 *Aneurismorrhaphy. Personal Experience with the Modern Method of Treating Aneurism. R. Abbe, New York.
31 *Aneurismorrhaphy. Case of Popliteal Aneurism Presenting Unusual Difficulties in Application of the Matas Operation. J. A. Blake, New York.
32 *Serous Coat of Blood Vessels Compared with the Peritoneum. R. T. Morris, New York.
33 Ligation of the Left Iliac Artery. W. J. Gillette, Toledo, Ohio.
34 *Question of Operation for Non-penetrating Intracranial Trauma. J. A. Hartwell, New York.
35 *Splenectomy. Report of Six Cases, with a Statistical Summary of All Reported Operations up to 1908. G. B. Johnston, Richmond, Va.
36 *Subcutaneous Rupture of the Spleen. G. G. Ross, Philadelphia.
37 Gangrene of the Gall Bladder. A. S. Lobingier, Los Angeles, Cal.

38 Treatment of Appendix Stump After Appendicectomy. M. Willis, Richmond, Va.
39 *Excision of Carcinoma of the Rectum by the Combined Method. J. A. Blake, New York.
40 *Diagnosis and Prognosis of Tuberculosis and Septic Conditions of the Kidney. G. E. Armstrong, Montreal, Can.
41 *Transperitoneal Removal of Tumors of the Bladder. C. H. Mayo.
42 Ainhum. E. A. Babler, St. Louis.
43 Arrest of Growth at the Lower End of the Radius After Separation of Its Epiphysis. A. Waechter, New York.
44 Strain-Fractures of the Knee. S. Lange, Cincinnati.

29 to 32. Abstracted in THE JOURNAL, March 28, 1908, p. 1067.

34. **Operation for Non-penetrating Intracranial Trauma.**—Hartwell considers this question from various viewpoints, therapeutic, diagnostic and prognostic, and reports illustrated cases, and formulates the following conclusions: First: Only in rare cases, namely, those of isolated injury affecting the sensorimotor area, can a positive focal diagnosis be made. Second: All grades of brain injury may be found in different parts of the same brain. Third: A general concussion may be followed by secondary changes in the circulation, which, if not relieved, produce pressure and death. Fourth: A pure decompressing operation is indicated in two conditions: (a) For the relief of pressure due to inaccessible hemorrhage, and (b) to relieve the pressure arising from traumatic edema of the brain. Fifth: Operation done without a very definite object in view, which object is based on careful diagnosis, is apt to be more harmful than hopeful. Sixth: The whole subject is fraught with manifold difficulties, and the brain surgeon should strive to become a practical neurologist in organic lesions.

35. **Splenectomy.**—Johnston reports six cases and summarizes all the reported operations up to 1908 as follows: Seven hundred and eight operations of splenectomy, with 514 recoveries and 194 deaths, a mortality of 27.4 per cent. In the period from 1900 to 1908 there are records of 355 splenectomies, with 289 recoveries and 66 deaths, a mortality of 18.5 per cent. If the instances of removal of the spleen for traumatic affections of that organ be excluded, there remain 242 splenectomies, with 210 recoveries and 32 deaths, a mortality of 13.2 per cent. The well-recognized contraindication to operation in leukemia may furthermore serve to exclude the seven cases in this series, which leaves a total of 235 splenectomies for diseases of the spleen with 208 recoveries and 27 deaths, a mortality of 11.5 per cent.

36. **Rupture of Spleen.**—Ross reports two cases and summarizes the reported literature as follows: Unoperated: Of 220 cases, 17 patients recovered—mortality, 92.3 per cent. Operative results: Splenectomy, 67 cases, 38 patients recovered, 29 died—mortality, 56.7 per cent.; splenorrhaphy, 2 cases, 1 patient recovered, 1 died—mortality, 50 per cent.; tamponade, 6 cases, 5 patients recovered, 1 died—mortality, 83.3 per cent. In the splenectomies 13 patients had complicating injuries, of which 9 died. In two who recovered, the complications were very slight.

39. **Carcinoma of Rectum.**—Blake summarizes his present opinions as follows: No single operative procedure for carcinoma of the rectum should be always carried out to the exclusion of others. The decision between the perineal and combined methods depends chiefly on the feasibility of preserving the efficiency of the sphincter and muscle, provided the growth is removable by the low route. When the combined method is used, an immediate abdominal anus should be formed unless the continuity of the natural passage can be restored with exceptional facility. Institution of a colostomy at a previous operation is an embarrassment rather than an aid.

40. Abstracted in THE JOURNAL, May 30, 1908, p. 1826.

41. Abstracted in THE JOURNAL, Jan. 11, 1908, p. 149.

Southern Medical Journal, Nashville, Tenn.

July.

45 Clinical Notes on Apoplexy. E. G. Wood, Nashville.
46 *Diagnosis of Painful Feet. E. L. Scott, Birmingham, Ala.
47 Recent Work on Stomach Digestion. W. H. Witt, Nashville.
48 Goiters of the Young. C. H. Mayo, Rochester, Minn.
49 Remote Symptoms and Effects of Cholecystitis. A. M. Cartledge, Louisville, Ky.
50 What We Should Know About Malaria. W. Krauss, Memphis, Tenn.
51 Use of Cocain in Surgery. J. S. Horsley, Richmond, Va.
52 Indications for the Mastoid Operation. F. P. Calhoun, Atlanta, Ga.
53 *Treatment and Prevention of Tuberculosis by Tuberculin Immunization. W. Litterer, Nashville.

46. **Painful Feet.**—Scott discusses the various conditions to which persistently painful feet may be due, and summarizes his remarks as follows: First: Acute painful flatfoot is found in persons who subject their feet to abnormal strains. Weak feet, speaking generally, are found in persons who do not accommodate the foot usages and in those whose general bodily condition is below the normal. Weak feet, if untreated, may result in true flatfoot, or chronic strains and displacements in the structure of the feet. Diagnosis is usually not difficult, and is made by exclusion unless the evidence of perverted function be plain. Second: Morton's toe, or anterior metatarsalgia, is most frequently seen in women. The cramping pain in the region of the metatarsophalangeal joint of the third or fourth toe gives the diagnosis. The pain from the strain resultant of relaxations and that due to malpositions and exostoses, is not experienced except when the foot is in activity, while in the first-mentioned condition the pain may appear even during rest. Third: The diagnosis of gout must always be one more of suspicion than of proof; in the average case the condition must be distinguished from the other types of arthritis. The diet and habits of patients bring on attacks, and so this is the leading point in diagnosis. Fourth: Gonorrheal arthritis affecting the foot is in some cases difficult of diagnosis on account of denial of infection. The formation of the exostoses on the os calcis and the other tarsal bones makes it clear. As would be inferred, males are most frequently subject to this condition.

53. **Treatment of Tuberculosis.**—Litterer discusses tuberculin therapy, and concludes that experiments on animals demonstrate the possibility of creating immunity to tuberculosis by the use of tuberculins. He is of the opinion that the time is not far distant when individuals showing a tuberculous tendency will submit themselves to the repeated injections of some form of tuberculin as a means of prophylaxis against this disease. The clinical method in the administration of tuberculin is far preferable to the one advocated by Wright in which the estimation of the opsonic index is essential. Tuberculin therapy is proving an essential aid in the treatment of tuberculosis, especially as an adjuvant to the hygienic-dietetic open-air treatment.

Chicago Medical Recorder, Chicago.

July 15.

54 Treatment of Hyperesthetic Rhinitis (Hay Fever) by Injections of Alcohol. O. Stein, Chicago.
55 A Few Operations in the Eye Department of St. Luke's Hospital and Northwestern Medical School. C. A. Wood, Chicago.
56 *Stab Wound of Fetus *in Utero*. D. A. K. Steele, Chicago.
57 *Action of Individual Drugs Obscured by Mixtures. H. B. Hemenway, Evanston, Ill.
58 *Diagnosis of Cutaneous Syphilis. F. E. Simpson, Chicago.
59 Endometritis. C. J. Drueck, Chicago.
60 Medical Texts for Midnight Sermons. Rev. E. Bell, Chicago.
61 Treatment of the Puerperium. H. M. Stowe, Chicago.
62 The von Pirquet Tuberculin Reaction in One Hundred and Fifty-four Children in an Orphanage. May Michael, Chicago.

56. **Stab Wound of Fetus in Utero.**—Steele reports a remarkable case, the extraordinary feature of which lies in the fact that a stab wound through the abdominal walls of the mother, penetrating the gravid uterus, entering the abdomen of the fetus *in utero*, completely severing the jejunum and permitting the escape of the large and small intestines through the wound of the abdominal wall of the fetus—should not in any way have interfered with the growth and development of the fetus *in utero*, or seriously affected the recovery of the mother. Another interesting fact is the complete occlusion of the two divided ends of the intestine of the fetus and the presence of nearly three ounces of glairy, sanguinoloid fluid in the stomach of the fetus at the time of operation—ten hours after birth.

57. **Mixtures and Drug Action.**—Hemenway condemns the dispensary practice of ready-made mixtures, as causing the student to lose sight of the finer and more exact distinctions

in prescribing and leading him to a slipshod system of therapeutics, which he follows out in practice by using the ready-made mixtures of large manufacturing concerns. In using these mixtures physicians become accustomed only to the general results, and lose sight of the accurate indications for the individual drugs. These disadvantages are intensified in the case of proprietary mixtures, the formulæ of which are liable to change at the will of the proprietors, and in any event are rarely complete. He instances various kinds of dangers that may result from the use of unmodified ready-made formulæ.

58. **Cutaneous Syphilis.**—Simpson discusses the three points in regard to the diagnosis of late tertiary eruptions: 1. How are we helped by the personal history of patients? 2. How are we helped by corroborative signs of syphilis? 3. How do we tell a tertiary syphilid simply by inspection? As regards the history, there are three sources of error: 1. Early syphilis has been mild or benign, has caused few symptoms, and these have been unnoticed or forgotten. 2. Early syphilis has given symptoms that have been misinterpreted. 3. Symptoms are present in the history, that lead one to suppose wrongly that syphilis is present. Simpson discusses each of these heads, with instances, and adds the tendency of such patients to prevaricate. As to the second question, the usual associated symptoms that help us in secondary syphilis are absent in tertiary eruptions. One may, however, search for, first, gummata of other organs, especially of the bones or testes, which are easily examined; second, scars in the skin or mouth. The determination by inspection of a tertiary eruption is aided by 1, location, and usually asymmetry; 2, destruction of skin; 3, the nature of the individual lesion, usually gummatous; 4, the grouping of the lesions and the border of the patch, tendency to serpiginous arrangement; and 5, rate of progress. When other things fail, we can fall back on the therapeutic test, mercury and potassium iodid.

Journal of the Michigan State Medical Society, Detroit.

July.

63 Diagnosis of Extrauterine Pregnancy. C. N. Smith, Toledo, Ohio.
64 Theory of Therapeutic Injections of Fresh Normal Serum in Acute Infections. C. M. Stafford, Detroit.
65 *New Apparatus for the Treatment of Fracture of the Patella. A. I. Lawbaugh, Calumet, Mich.
66 Sudden Death in an Infant Having an Enlarged Thymus Gland with Three Lobes. H. M. Rich, Detroit.
67 Cases of Otoantritis, Subperiosteal Abscess in Infants; Pseudocholesteatoma, Exostosis and Artificial Drum Membrane in Adults. E. Amberg, Detroit.
69 *New Dietic and Injection Method of Treating Typhoid, with Report of Cases Successfully Treated in the Last Ten Years. F. J. W. Maguire, Detroit.
70 Biliary Surgery. H. C. Wyman, Detroit.

65. **Fracture of Patella.**—Lawbaugh describes a new method of treating fractured patella as follows: As the separation of the patellar fragments is chiefly due to the contraction of the quadriceps extensor muscle, it becomes necessary to have this relaxed so as to bring the fragments properly into apposition. To get a fixed point from which to make this traction, adhesive strips 1½ inches wide are used. The first strip passes from the inner and upper part of the thigh across the anterior surface to the outer side of knee joint, leaving an end for the application of a traction cord; the same is done on the outer side of thigh across to inner surface of knee joint. A sufficient number of these strips are used to cover the entire muscle. A traction cord is fastened to each aggregation of the ends of these strips on the inner and outer sides of the knee joint. These cords pass downward at an oblique angle and are fastened to the lower end of the splint. The whole is then swung by the suspension ropes and the amount of traction adjusted by the angle of suspension from the ceiling of the room. A firm pad just above the upper edge of the upper fragment will materially assist in keeping this fragment in position and give an additional point for the better traction. The lower fragment is held in position by means of adhesive strips pulling it upward and prevent the tilting which sometimes occurs. Passive motion can be instituted and kept up as much as may be deemed necessary without disturbance to the apparatus or fragments.

69. **Treatment of Typhoid.**—Maguire noted when treating children with summer diarrhea that shortly after giving them nitrogenous food in the form of milk or beef tea, their temperature would always rise; whereas when giving them a carbohydrate diet, in the form of barley or rice water, this rarely happened. He was led to discard milk in typhoid from this and other considerations, and now never uses it. He compares the statistics of typhoid mortality in the American army during the Spanish-American war, where milk was largely used, with those of the Japanese army in the Russo-Japanese war, where rice water was used in typhoid and dysentery. He describes the steps of investigation by which he was led to his present injection treatment, in which he administers per rectum from 3 to 5 drops of phenol in a pint of sterile water, by means of a fountain syringe a foot above the patient. About an hour was allowed for the injection, using a gauge with a water-glass attachment. Maguire has used this treatment also in pneumonia and gastritis. He has treated 138 cases by this method, with success.

Journal of Nervous and Mental Disease, New York.

July.

71 Disease of the Primary Motor Neurons Causing the Clinical Picture of Acute Anterior Poliomyelitis: the Result of Poisoning by Cyanid of Potassium. J. Collins and H. S. Martland, New York.
72 *Significance of Phrictopathic Sensation. E. Jones, London.
73 Tumor of the Frontal Lobes, with Symptoms Simulating Paresis. F. X. Dercum, Philadelphia.

72. **Phrictopathic Sensation.**—Jones says that during the process of recovery from a hysterical anesthesia, a great variety of abnormal sensations may be experienced by the patient when the part in question is stimulated. Certain features characteristic of these sensations occur in such constant association that he includes them in a single group, for which he proposes the term "phrictopathic." These are: 1, Abnormal persistence of the sensation of cutaneous stimulus; 2, delayed reaction time; 3, non-perception when a more normal sensation is present; 4, tendency to immediate motor response; 5, disagreeable quality of the sensation; 6, impairment of the sense of personal ownership. The author concludes that sensations showing the six features here grouped together under the designation "phrictopathic" are due to a cleavage between the esthetic sensibilities and the autosomatognostic memory feelings of a part of the body, which results from hysterical disaggregation implicating the latter group of mental processes; the degree to which the features are marked is a measure of the extent of this cleavage.

Journal Missouri State Medical Association, St. Louis.

July.

74 Relation Between Diseases of the Skin and Diseases of Other Organs of the Body. J. Duncan, St. Louis.
75 *Sphere of Modern Surgery in the Relief of Stomach Disorders. H. E. Pearse, Kansas City.
76 Stricture of the Esophagus. C. E. Fulton, Springfield.
77 Unclassified Conclusions in Otolaryngology. F. C. Ewing, St. Louis.
78 History of Amputations I Have Done Above the Shoulder Joint. G. Halley, Kansas City.
79 General Anesthesia. J. J. Farrell, Hannibal.
80 Leukemia. P. Donohoo, Joplin.

75. **Surgery in Stomach Disorders.**—Pearse recognizes two great classes of disorders of the digestive function, both curable by surgical operation. The one an array of diseases of the gastric structure itself, the other reflected, so to speak, from other organs. Of the gastric neuroses, so called, he merely states that operation should cease when it finds a normal abdomen in so far as its visible anatomy is concerned. The ulcer cases should be attacked surgically, either by excision or by a gastroenterostomy, according to the case. The cicatricial contractions should be attacked and cured surgically by pyloroplasty or by a gastroenterostomy.

The duodenal ulcers should be attacked and cured surgically by gastroenterostomy or by excision, according to location. The cancer cases should be attacked surgically and the diseased area removed, if it is possible to hope for a cure; if this is impossible, from the great advance made by the disease, a gastroenterostomy relieves pain and prolongs life.

Buffalo Medical Journal.

July.

81 *Acute Pancreatitis. Report of Four Additional Cases, with Autopsies. C. G. Stockton and H. U. Williams, Buffalo.
82 *Bacterial Vaccines in Relation to Ordinary Pyogenic Processes. N. K. MacLeod, Buffalo.
83 Stanford Emerson Chaillé. L. S. McMurtry, Louisville, Ky.

81. **Acute Pancreatitis.**—Stockton and Williams add three new cases of this disease to the four already reported to them. They comment on them, and, as to etiology, consider the claims of traumatism, gallstones, infection, gastroduodenal catarrh, certain causes inherent in the pancreas itself, arteriosclerosis and embolism and thrombosis, to be classed as factors.

82. **Bacterial Vaccines.**—MacLeod says that in staphylococcic infections the efficacy of the vaccines is, in his opinion, beyond question. The results have been so uniformly satisfactory in boils, carbuncles, septic infections following wounds, sycosis, felons and similar lesions, that he feels that they are the most valuable assets at our disposal to-day. There can be no doubt that a stock vaccine is possible, but every staphylococcic vaccine is not suited to be used as a stock vaccine. It is rare to find one that gives uniform and satisfactory results in all cases; the dosage of almost every vaccine varies considerably; it is only after repeated trials that we either adopt a vaccine or settle on the appropriate dose. Again, every case has to be considered from other standpoints than that of vaccination. The isolation of the focus from the influence of the body fluids must be considered—it is manifestly impossible for the protective substances to have any influence on a focus walled in by a thick pyogenic membrane; again, any patient who is in a pronounced anemic condition can scarcely be expected to respond to inoculation, since those factors that have to do with the manufacture of the protective antibodies are evidently suffering with the general body depression. Finally, the question of the clotting power of the blood must be borne in mind; frequently patients with a high clotting power do not respond satisfactorily until this has been lowered by appropriate means. In regard to the streptococcic infections he asserts that, with the exception of the *Streptococcus erysipelatis*, a stock vaccine, in his opinion, is valueless. Polyvalent vaccines composed of strains of bacteria that have been of the greatest benefit in their specific cases, have proved of no avail whatever when used indiscriminately.

Louisville Monthly Journal.

July.

84 Acute Cholecystitis. H. H. Grant, Louisville.
85 Tuberculous Infection Through Milk. E. C. Schroeder, Bethesda, Md.
86 Extracts from the War Correspondence of the Late Dr. James M. Holloway. A. H. Rice, Leesburg, Ky.
87 Etiology of Syphilis. H. H. Koehler, Louisville.
88 Brain Abscess Following Middle-Ear Suppuration. A. O. Pfingst, Louisville.
89 Legal Relations of the Railroad Surgeon to Railroad Companies and the Duty of Injured Person to Make His Loss or Damage on Account of His Injury as Light as Possible. B. D. Warfield, Louisville.

Texas State Journal of Medicine, Fort Worth.

July.

90 *Diverticulosis and Diverticulitis. J. J. Terrill, Galveston, Texas.
91 Imperfections of the Vital Statistics Laws of Texas and a Possible Remedy. L. B. Bibb, Pass Cavallo.
92 Work Done by the State Health Department. W. B. Brumby, Austin.
93 Appendicostomy. W. B. Russ, San Antonio.
94 Work Done by the State Board of Medical Examiners. G. B. Foscue, Waco.

90. **Diverticulosis and Diverticulitis.**—Terrell urges that the terms diverticulosis and diverticulitis should have definite places in medical nomenclature, and should have definite meanings assigned to them. The possibility of the presence of these conditions should be borne in mind, especially in the aged. A more careful routine examination of the sigmoid and rectum in autopsies should be made to determine more nearly the relative frequency and the class of cases in which diverticula occur. It is to the surgeons that we must look for careful records of the clinical aspects of diverticulitis, and on them also must we depend for much of the pathologic detail.

New York State Journal of Medicine, New York.

July.

95 *Chronic Middle-Ear Deafness. W. S. Bryant, New York.
96 Chronic Suppurative Cystitis: Treatment and Prognosis. V. C. Pedersen, New York.
97 Heredity in Disease. C. W. Southworth, Forestville.
98 Neuropathic Diathesis as Condition of Headache and Other Functional Diseases. G. M. Gould, Philadelphia.
99 When and How Shall We Use Cycloplegics in Refraction Work? A. Duane, New York City.
100 *Medical Libraries for the Smaller Centers. S. Baker, Utica.
101 Effect of Alcohol on Secretion and Digestion. H. C. Jackson, Albany.
102 Esophagoscopy and Bronchoscopy, with Reports of Six Cases. T. H. Halsted, Syracuse.
103 The Purse-String Suture, Its Right and Wrong Application in Appendicectomy. J. F. Black, White Plains.
104 Lives of Officers of the Medical Society of the State of New York. J. J. Walsh, New York.

95 and 100. Abstracted in THE JOURNAL, Feb. 29, 1908, p. 722.

The Ohio State Medical Journal, Columbus, Ohio.

July 15.

105 *Annual Address in Medicine. F. Forchheimer, Cincinnati.
106 Gonorrheal Arthritis. G. L. Bauman, Cleveland.
107 *The Homeopathy of Hahnemann Compared with the Homeopathy of To-day. C. Higgins, Zanesville.
108 *Medical Fee Bills. W. B. Patton, Springfield.
109 Pemphigus Foliaceus. E. D. Tucker, Toledo.
110 Treatment of Earache Without Operation. W. E. Murphy, Cincinnati.
111 Indication and Technic for Incising the Drumhead in Acute Otitis Media. O. B. Monosmith, Loraine.

105. Abstracted in THE JOURNAL, May 23, 1908, p. 1720.

107, 108. Abstracted in THE JOURNAL, Sept. 28, 1907, p. 1139.

Journal of the Kansas Medical Society, Kansas City.

July.

112 *Prostatic Hypertrophy. L. H. Munn, Topeka.
113 Faucial Tonsils, Their Anatomy, Physiology and Removal. J. Ogsell, Wichita, Kans.
114 Antitoxin in Diphtheria. F. Campbell, Kansas City, Kans.
115 Iritis. A. C. Graves, Pittsburg.
116 Treatment of Fractures. J. G. Sheldon, Rosedale.

112. Abstracted in THE JOURNAL, May 3, 1908, p. 1828.

Journal of the Tennessee State Medical Association, Nashville.

July.

117 *Ophthalmia Neonatorum as a Sociologic Problem. H. Wood, Nashville.
118 *Intramural Injections of Salicylate of Mercury in Treatment of Syphilis. J. W. Handy, Nashville.
119 *Snoring, Mouth Breathing, etc. G. E. Vaughan, Clarksville.
120 *Case of Obstruction to the Ureter. M. C. McGannon, Nashville.

117 and 120. Abstracted in THE JOURNAL, April 25, 1908, p. 1372.

118, 119. Abstracted in THE JOURNAL, May 2, 1908, p. 1453.

Mississippi Medical Monthly, Vicksburg.

July.

121 The Race Problem. What Shall We Do With Our Negro Consumptives? H. L. Sutherland, Rosedale.
122 The Calomel and Podophyllin Habit. Rice and Klotz, Summit.
123 The Practitioner's Need of Bacteriology. J. B. Bullitt, University.

Journal of the South Carolina Medical Association, Greenville.

June.

124 Differential Diagnosis of Appendicitis. J. M. T. Finney, Baltimore.
125 So Called Continued Fevers. J. J. Watson, Columbia.
126 Tumor of the Carotid Gland. R. S. Cathcart, Charleston.

Journal of the Oklahoma State Medical Association, Guthrie.

June.

127 The Surgical Prostate. H. Reed, Oklahoma City.
128 Periodical Headaches. J. M. Postelle, Oklahoma City.

July.

129 Pilocarpin in Strychnin Poisoning. J. D. Batson, Marietta.
130 Cardiovascular Changes in Renal Diseases. A. W. White, Oklahoma City.

St. Paul Medical Journal.

July.

131 Chloroform Anesthesia. E. Boeckmann, St. Paul.
132 Ether Anesthesia. W. Davis, St. Paul.
133 Experience with Hyoscin-Morphin Anesthesia in Obstetrics. B. H. Ogden, St. Paul.
134 Apparatus for Rectal Anesthesia: Fergus Ether Inhaler. C. F. Denny, St. Paul.
135 Anesthesia. H. Sneve, St. Paul.
136 Statistical Aspects of Tuberculosis in Minnesota. C. Easton, St. Paul.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London.

August 1.

1 *President's Address, British Medical Association. S. Snell.
2 *Modern Medicine. J. K. Fowler.
3 *Prophylaxis in Surgery. R. J. Pye-Smith.

1. **Miners' Nystagmus and Fire Damp.**—In his presidential address before the British Medical Association this year, Snell called attention to Sheffield as the "cradle of the study of industrial diseases." He instanced the work of Knight and Holland at the beginning of the 19th century on miners' and knife grinders' phthisis, that of Hall in 1865 on lead poisoning among file cutters, and fell back for an illustration of the profitableness of a partnership between industrial pursuits and a life close to Nature, on Buchan's appreciation of the workingmen's gardens in Sheffield, in 1769. Snell cites four well-marked groups of affections of the eye of different causation representing many occupations. Of these he selects for special comment miners' nystagmus, concerning which many years ago he made the observation that has proved to be the essential part in the etiology of the affection, namely, that the cases that came under his notice were always in men who had to work in a constrained position that resulted in weariness of the elevator muscles. He explains the importance and the usual method of detecting fire damp in mines by the presence of a pale blue flame, or "gas cap" above the turned-down flame of the safety lamp. His investigations have demonstrated that the apparent "dancing" of the safety lamps, which is a prominent feature of miners' nystagmus, is, as he had suspected, a serious hindrance to the recognition of a gas cap. This was shown in the case of forty-eight miners from thirteen different collieries, all of whom were incapable of detecting a gas cap unless a dangerous amount of gas was present. This leads him to urge a periodical medical examination of officials, and in the case of a colliery explosion, an inquiry into the visual condition of those responsible for determining the presence of gas in dangerous proportion.

2. **Modern Medicine.**—Fowler, in the address in medicine, repeats the assertions made by him last year (*Lancet*, Nov. 9, 1907; abstracted in THE JOURNAL, Dec. 7, 1907, p. 1957), that "having regard to the wide field which it covers, the advance of medicine during the last thirty years has been infinitely greater in the mass than that of surgery, although, perhaps, not so readily appreciable by the public;" and he expresses a confident belief that we need have no fear for the future. He reviews the position in regard to a few of the more urgent problems confronting us as affecting the art and science of medicine, the student, practitioner, physician and profession. After touching on the place of Pasteur and Lister in medical science, Fowler discusses at considerable length vaccine therapy and the process of immunization, regarding which the evidence appears to him to be overwhelming that agents other than the leucocytes play the more important part in the process. He thinks it likely from present indications that we may ultimately possess an effective remedy for malignant endocarditis, and refers to the official endorsement by the British, German and Indian governments of Wright's antityphoid inoculation. He considers, however, that the greatest degree of interest attending the bacterial vaccine question centers around pulmonary tuberculosis. He contrasts the verdict of eight physicians at the Brompton Hospital, in 1890, after a careful trial of the old tuberculin—that they failed to observe any favorable influence, but found serious dangers accompanying its use—with the fact that the new tuberculin is now being used at Brompton Hospital and elsewhere without any of the disastrous results mentioned in the former report. This he attributes to the control of the opsonic index. He then discusses the theory of autoinoculation, and referring to the system of graduated labor introduced at the Frimley Sanatorium by Dr. M. S. Paterson, says that in afebrile cases when this treatment is supervised with exact knowledge of the individual it may render opsonic technic unnecessary. The sanatorium and vaccine therapy he considers so far from antagonistic that they will prove of mutual assistance.

It is to be hoped, he says, that there will never be a repetition of the lamentable lack of judgment, of self-control, and of those critical faculties which should characterize the members of a scientific profession which were displayed in 1890 and the following years. If to-morrow we were in possession of an absolutely certain remedy for pulmonary tuberculosis it is probable that nearly two-thirds of the existing cases would be beyond the hope of cure. There is no drug known which is not limited in its effects by conditions of the body and the extent of the disease, which latter in cases of pulmonary tuberculosis is generally about three times greater than the physical signs indicate. Ought not these facts, he asks, to give pause to those irresponsible directors of the lay press who are careless of the hopes they excite or the grief which they cause, so long as they obtain sensational copy which will increase the sale of their papers?

Passing to the second division of his subject, Dr. Fowler expresses his confidence that more and more the preliminary and intermediate training of the student will take place in universities, leaving the purely clinical studies to the medical schools, thus necessarily associated with hospitals. He discusses the abuse of medical charities and lays his finger on the source of the evil when he says: "This abuse of the generosity of the profession will in my belief continue and increase, so long as it is to the interest of the managers of hospitals to show that they are doing what it is the fashion to call 'a great work.'" The moment that the relief of mere numbers ceases to be a merit and it becomes to their interest to show that they have done everything possible to insure that those who receive gratuitous medical treatment are really deserving of it, a great falling off in the attendance will immediately occur. As to the physician of the future, Fowler demurs to Wright's idea that he will be merely an immunizator, and submits that he must continue to be in the future as he has been in the past, above all things a man of wide clinical experience. The one thing that can not be read up is diagnosis. That must be learned at the bedside. He says:

"It must have occurred to every physician to be called to a case in which the condition of the blood and of every secretion that lends itself to examination had been carefully investigated, not once only, but several times, and yet the diagnosis was as far, if not farther, off than ever; whereas, an intelligent use of the old-fashioned methods of inspection, palpation, percussion and auscultation showed that it was literally staring one in the face."

He would not, however, be thought to undervalue the very great assistance given to diagnosis by the newer methods. He only urges that the older should not be allowed to fall into disuse.

3. **Prophylaxis in Surgery.**—Pye-Smith, in the Address in Surgery, holds prophylaxis as important in surgery as in medicine or obstetrics, or even in sanitary science. He discusses legislative prophylaxis, the prevention of accidents, reduction of risk in working with poisonous substances, etc. Then turning to prophylaxis in operative surgery, he says that we are especially concerned with the prophylaxis of pain, of hemorrhage, of shock, of sepsis, and of death. Various forms of anesthesia and pressure forceps have brought efficient prophylaxis of pain and hemorrhage within our reach. As to shock, not enough attention is paid to avoidance of the loss of warmth prior to and during operation. The preliminary starvation before anesthesia, if carried too far, may cause serious depression, and thus tend to shock. So also may the terrifying effect on a nervous person of being brought into the operating room before anesthesia. Sepsis, of course, may be prevented by careful attention to well-known measures, among which he insists on the use of gloves. He then discusses the surgical prophylaxis of disease and accidents in various parts of the body; and notably he insists that in appendicitis, while the interval operation is an excellent one when that stage is present, it is bad to allow a patient to die in the acute stage while waiting for the quiescent period in which to operate. He discusses the prophylactic surgery of the eye, nasopharynx, teeth, ear, chest, abdomen, pelvis and extremities, and of cancer, syphilis and suicide, and concludes by urging that we "think prophylactically."

Lancet, London.

August 1.

4 *President's Address, British Medical Association. S. Snell.
5 *Modern Medicine. J. K. Fowler.
6 *Prophylaxis in Surgery. R. J. Pye-Smith.
7 Blood Changes in Ankylostomiasis. A. H. Brehaut.
8 Case of Carcinoma of the Jejunum, with Remarks on Malignant Disease of the Small Intestine. C. R. Keyser.
9 *Treatment of Erysipelas. H. T. Gray.
10 Malarial Cirrhosis of the Liver. A. J. B. Duprey.
11 An Unusual Fracture of the Clavicle. J. W. Rob.

4, 5, 6. See abstracts 1, 2, 3.

9. **Erysipelas.**—Gray reports a series of six cases of erysipelas treated by Metchnikoff's serum, which, while too few to justify a definite conclusion, warrant, in his opinion, a further trial of that preparation, which he thinks more constant in its results than the antistreptococcal serum. The patients were all children between 1 year and 10 years of age.

Medical Press and Circular, London.

July 29.

12 *Duodenal Ulcer. B. G. A. Moynihan.
13 Acquired Atresia of the Introitus and Vagina in the Adult. H. MacNaughton-Jones.
14 Construction and Management of Crematoria. C. K. Millard.
15 Bier's Method for Practitioners. M. Auffret.

12. **Duodenal Ulcer.**—Moynihan says that a knowledge of duodenal ulcer has grown out of operations for supposed gallstone disease, at which the gall bladder was found healthy, but ulceration commencing with stenosis was found in the duodenum. Gradually the symptomatology of duodenal ulcer became established, because after the surgeon had seen these cases he was able to learn from the patient the symptoms in greater detail; so the medical view, that duodenal ulcer was rare and difficult to recognize clinically, became altered altogether. It is now known to be very common and that it can be recognized with absolute certainty in nine cases out of ten. Duodenal ulcer, as it is seen, is almost invariably a small hard round ulcer, situated within half an inch of the pylorus and nearly always on the anterior surface of the duodenum, exactly where the first squirt through the pylorus would impinge on the duodenal mucosa, and this slight traumatism is no doubt a factor of some significance. Moynihan says: "If you are present at an operation for what are supposed to be symptoms of duodenal ulcer and you do not see the ulcer, do not believe it is there, . . . for it requires no imagination on the part of the surgeon or the audience to recognize it instantly." Duodenal ulcer exists more commonly in men than in women, viz., about two to one. Patients may suffer from it at both extremes of life. The symptoms in most cases are perfectly characteristic, but are described under a different name in the text-books. In the latter is described under duodenal ulcer, not duodenal ulcer as it should be recognized, but neglected duodenal ulcer. It is about as justifiable to include perforation and hemorrhage among the symptoms of duodenal ulcer, as it would be to include ruptured perineum among the symptoms of pregnancy. Moynihan describes the symptoms of duodenal ulcer as follows:

> The patient tells you that he has certain definite attacks; and if you take the history given in detail, letting the man tell his own story, he will give you the impression of having read something which has been written about duodenal ulcer, which he is recounting to the best of his recollection to please you. He says that his trouble comes on in attacks, which are nearly always worse in winter than in summer, and are very apt to be precipitated by a chill. Let us follow the patient through the day. He makes a meal at eight in the morning, and from 2 to 2½ hours after it he is fairly comfortable; it is his best time. At the end of that time he has a feeling of discomfort in the epigastrium; he feels full and heavy, and may get some relief from the belching of gas. Some of these patients develop a habit of belching. They may bring up a very sour fluid, which tastes very bitter and acid, and makes the mouth dry and the teeth chalky. This pain gradually increases until the next meal time comes. To this I some years ago applied the name of "hungry pain." At the next meal the patient almost instantly gets relief, and that relief persists for two or three hours again. He probably eats a heavy dinner, and will nearly always tell you he has something before he gets into bed; a glass of milk or a cup of cocoa and a biscuit. He sleeps comfortably, until he wakes about 2 a. m. He gets relief from nibbling a biscuit, which he keeps at the bedside. The pain is found to be most relievable by something stodgy and indigestible. Taking an alkali relieves the pain; so will emptying the stomach by washing it out. If these symptoms which I have described are recurrent, you can diagnose duodenal ulcer.

Moynihan then discusses the differential diagnosis, and particularly notes that, after mistaking gallstone cases for duodenal ulcer, on talking it over with the patients he found that those with gallstones nearly always had a spasm of the diaphragm with a catch in the breath in an attack of pain, a symptom which he believes to be absolutely significant. Another indication of gallstones is a jaundice, too light to be evident to the naked eye or in the stools or urine, but perceptible in the blood as a deepening of the tinge of the serum after the corpuscles have settled in a capillary tube. As to treatment, perforation necessitates instant operation. Moynihan has made it a practice, in such cases, first to close the ulcer and secondly to perform gastroenterostomy. The second indication for operation is the occurrence of hemorrhage, which is likely to be fatal in duodenal ulcer, differing in this respect from gastric ulcer, in which death from hemorrhage is rare. The ulcer should always be infolded. If he feels that he should not excise the ulcer he endeavors to secure by suture all the vessels running to it. Chronic duodenal ulcer causing the manifestations mentioned should be treated surgically, but gastric ulcers may often do well medically. He discusses the various operations.

Clinical Journal, London.

July 29.

16 Injuries to the Head. A. A. Bowlby.
17 Sprains. J. J. Clarke.

Quarterly Journal of Medicine, Oxford.

July.

18 *Direct Inspection of the Gastric Mucous Membrane. H. S. Souttar and T. Thompson.
19 *Clinical Bearing of Cutaneous Tenderness on Various Acute Abdominal Disorders, Especially Appendicitis. H. Robinson.
20 *Origin of Endogenous Uric Acid. E. P. Cathcart, E. L. Kennaway and J. B. Leathes.
21 *Respiratory Movements in Hemiplegia: Case with Tracings Showing the Movements of the Two Sides, and the Peculiar Effects of Coughing, and a Cyrtometer Tracing Showing Peculiar Changes in the Shape of the Paralyzed Thorax. S. West.
22 *Primary Malignant Disease of the Appendix. R. G. Elwell.
23 Pads on the Finger Joints. W. H. White.
24 Extrasystole: Contribution to the Functional Pathology of the Primitive Cardiac Tissue. J. McKenzie.

18. **Inspection of Gastric Mucous Membrane.**—Souttar and Thompson describe their newly invented gastroscope, which consists essentially of a series of short tubes strung together on two narrow steel bands and encased in rubber. On pulling the steel bands, the instrument can be converted into a rigid tube. There is a small electric lamp. The entire stomach wall can be swept with the instrument, about six inches being visible at once. The article is illustrated.

19. **Cutaneous Tenderness.**—Robinson refers to the ten conclusions drawn by Sherren (*Lancet*, 1903, ii, 816) in a paper drawing attention to the frequency of cutaneous tenderness in appendicitis, its distribution, determination and clinical bearings. Sherren believed that information concerning the appendix could be obtained in this way. Robinson examines Sherren's conclusions in detail, and embodies his own deductions in a series of propositions of which some are a repetition of Sherren's conclusions, and others are not. Robinson's deductions are as follows:

1. In diseases of the appendix, or originating there, cutaneous tenderness is sometimes present: most commonly in the skin innervated from the eleventh dorsal segment of the spinal cord, but also sometimes in the territory of the ninth, tenth and twelfth, and possibly of the eighth dorsal and first lumbar segments.

2. The areas of such tenderness are most frequently of three main forms described by Mr. Sherren in the *Lancet* of Sept. 19, 1903. But cases are not rare in which the areas are irregular and atypical altogether.

3. A patient displaying an area of superficial tenderness of one of these three defined varieties is, in the great majority of cases, suffering from appendicitis.

4. Nevertheless, many other diseases may resemble appendicitis in this respect: for instance, renal colic, perforated duodenal ulcer, intestinal colic, perimetritis.

5. Inflammation of the nerve trunks is not the cause of this symptom, for the latter may occur in skin supplied by the posterior primary divisions of the spinal nerves.

6. There is little evidence as to the immediate cause of this reflex tenderness, but it is probably irritation of the afferent nerves from the appendix: the irritant is possibly in some cases tension, in others if is almost certainly something different.

7. The symptom is found in a minority only of the cases of appendicitis seen in hospital practice. It may vary in character, or disappear altogether, while a case is under observation; during the progress of an attack it may appear in a patient in whom it has not originally been present.

8. Cutaneous tenderness is found as frequently in subsequent as in first attacks of appendicitis. It may persist long after all other signs of the disease have disappeared.

9. The prognostic and therapeutic significance of cutaneous tenderness in cases of appendicitis is slight. It is somewhat less often found in cases of abscess than in other cases; when the symptom and an abscess coexist, it is usually in an early case.

10. Cases of widespread peritonitis set up by appendicitis may display large areas of cutaneous tenderness over the right side, or over the whole, of the abdomen.

20. **Endogenous Uric Acid.**—Cathcart, Kennaway and Leathes close an exhaustive paper with the following conclusions:

1. A marked increase in the output of endogenous uric acid has been found to occur in three conditions: (a) fever, (b) exposure to cold, (c) after severe exertions. The increased output coincides and terminates with the febrile rise of temperature, coincides with

and outlasts by many hours the exposure to cold, follows the exertions and lasts for many hours after them. It is suggested that in all these three conditions the uric acid has its origin in metabolic processes occurring principally in the voluntary muscles, and not immediately related to voluntary contractions and work.

2. The daily tide in uric acid excretion, high output in the morning, low output at night, is not due to retention of uric acid formed during the night, nor is it due to the fact that the digestive organs are inactive during the night, if that is a fact, with the last meal taken at 9 or 10 p. m., as in most of the author's experiments. It is rather due to the quickened activity of all functions, especially those of the voluntary muscles, which results from the rest of sleep.

3. Generally speaking, the more lively the performance of the functions of the body as a whole, the greater the amount of uric acid produced will tend to be.

21. **Respiratory Movements in Hemiplegia.**—West recalls Hughlings Jackson's description of the peculiar changes of respiratory movements in hemiplegia and his explanation thereof. He then reports a case of right hemiplegia from a clot in the middle cerebral artery occluding the Sylvian artery and the lenticulo-striate artery, which showed a peculiar modification of respiration. As the patient lay in bed on the back, the right, i. e., the paralyzed, side was flatter all over the front than the other, and moved but little on respiration. The difference between the two sides was obvious to the eye and hand in ordinary breathing, and was greatly increased in voluntary breathing. Coughing produced the most extraordinary effect, for while the sound side contracted, the paralyzed side bulged or was blown out. This gave a most curious sensation to the hand laid on the side. The diaphragm moved apparently equally on the two sides, and an *x*-ray examination made the following day seemed to confirm this. By means of an apparatus, the respiratory movements of the sound and the paralyzed sides were recorded synchronously. In ordinary breathing the following peculiarities are observed on the paralyzed side: 1. The respiratory excursion, both inspiratory and expiratory, is much diminished, i. e., the height of the wave is reduced. 2. The character of the wave is altered. (a) It is much rounder; (b) it is delayed, for the rise may not begin till that on the sound side is three-fourths to five-sixths complete; (c) it is shorter, so that the postexpiratory pause, which hardly exists on the sound side, is very obvious. In voluntary breathing the differences are of the same kind, but exaggerated. (c) On coughing, the curves move in opposite directions, for while on the sound side after somewhat exaggerated inspiration the chest contracts, on the paralyzed side, instead of contracting it is distended by the cough, and the more powerful the cough the greater the distention or bulging. The effect of coughing was very remarkable, and it as well as the change of shape noted on the paralyzed side are suggested by West as new observations.

22. **Malignant Disease of Appendix.**—Elwell describes a case of primary malignant disease of the appendix, and comments on its rarity, its early age incidence, undoubted but undefined relationship with inflammatory conditions, complete dissociation from all gross manifestations of malignant disease, and its histology, which does not allow of its definite classification, but there are not yet sufficient grounds to justify the introduction of any other term than carcinoma.

Indian Medical Gazette, Calcutta.

July.

25 *Incineration in Military Stations. H. Hamilton and H. Raitt.
26 Experiments on Rat Exterminations. R. O. Saigol.

25. **Incineration.**—Hamilton and Raitt describe, with a photographic illustration, the latter's incinerator for burning up animal and human excrement, litter, sweepings, etc., in isolated places and small communities, where the disposal of such matters is a difficult problem. It is intended primarily for military cantonments, but could be cheaply and expeditiously constructed in any outlying district away from the resources of civilization.

Archives des Maladies du Cœur, Paris.

Vol. I, July, No. 7, pp. 401-456.

27 Histologic Modes of Destruction of Blood Corpuscles and Rôle of the Spleen in Production of Blood Pigment. (Modalités histologiques de l'hématolyse.) E. Gauckler.
28 To-and-fro Rhythm of Anemic Souffle at the Base of the Heart. ("Rythme de va-et-vient" du souffle anémique de la base.) L. Gallavardin.
29 *Connection Between Arterial Hypertension, Hypertrophy of the Heart and Hyperplasia of Hypophysis and Suprarenals. J. Parisot.

29. **Hypertension, Hypertrophy of the Heart and Hyperplasia of Hypophysis and Suprarenals.**—Parisot reports a case in which a cardiovascular syndrome (arterial hypertension, hypertrophy of the heart and atheroma) was accompanied by hyperplasia of the suprarenals and hypophysis, while the kidneys were intact. There were also symptoms indicating extremely high tension in the cerebrospinal fluid. Autopsy showed cystic degeneration of the ovaries, thyroid, hypophysis and suprarenals. The patient was a girl of 22, and six months before the serious and fatal symptoms there was amenorrhea and other symptoms of ovarian insufficiency developed, soon followed by the vascular hypertension, cardiac palpitations and rebellious headache. The ovarian lesion was probably primary; the hyperplasia of the hypophysis and suprarenals was probably a secondary process, but the hyperfunctioning seems to have brought on the cardiovascular lesions and symptoms. His recent research has confirmed the blood-pressure-raising properties of extract of the hypophysis, the most powerful in this respect after suprarenal extract. The patient died suddenly, after several hours of coma. The urine was constantly normal. During the last few days the temperature rose to 38.5 C. (101 F.), the pulse at times to 160.

Presse Médicale, Paris.

July 18, XVI, No. 58, pp. 457-464.

30 The Lipoids. H. Iscovesco.
31 *Temporary Localization of Injected Drugs. (Nouvelle méthode thérapeutique.) R. de Gaulejac.

July 22, No. 59, pp. 465-472.

32 *Tabes and Surgery. Debove.
33 *Hygiene in China. (L'hygiène urbaine en Chine.) J. J. Matignon.

July 25, No. 60, pp. 473-480.

34 Soluble Ferments. H. Roger.
35 Hysteria and Suggestion. (Revision de l'hystérie.) H. Meige.

31. **Temporary Localization of Injected Drugs.**—A girl of 15 was bitten by a viper in the tip of the middle finger; the finger swelled and became gangrenous below a ring she was wearing on that finger, but there was no general intoxication after the first acute but transient symptoms. De Gaulejac ascribes the favorable outcome of the case to the constriction from the ring, and confirmed this assumption by experiments on rabbits showing that a venom or toxic drug was comparatively harmless if temporarily localized in the part in which it was injected. Young rabbits injected with a dose of cocain in one hind leg (which was rapidly fatal for the controls) tolerated it without injury if an elastic band was applied above to induce passive hyperemia for two or three hours. Constriction for one hour proved ineffectual. Older rabbits displayed less resistance. These facts not only throw light on Bier's method of therapeutic hyperemia, but they also suggest, he thinks, that a drug can be administered in this way in doses otherwise toxic for the organism. It may be possible by this means to increase the so-called maximal doses of certain drugs without harm, as the temporary localization of the drug may induce exceptional production of antitoxin, or the drug may be incorporated by the leucocytes, which will then yield it up, little by little, without causing intoxication. Temporary localization of the dose of a powerful drug may thus prove an important modification in therapeutics.

32. **Tabes and Surgery.**—Debove asserts that in the presence of a joint, bone or visceral affection of obscure origin, the possibility of tabes must be borne in mind. Tabes once diagnosed, the surgeon should never attempt an operation unless under exceptional circumstances. An operation can only be palliative, for a peripheral operation is unable to cure an affection whose origin is central. Any traumatism, besides, is liable to have an injurious influence on the evolution of the tabes, as he shows by a number of typical examples. In one case, a traumatic injury of the knee was treated by repeated resection and finally exarticulation of the hip. The patient was a man of 42, a druggist, and he now has lightning pains. In another knee affection, resection was followed by development of gastric and laryngeal crises and the patient died four weeks after the operation. The structure of the bones in tabes is so profoundly altered that surgical intervention, he insists, is contraindicated. He also relates some instances of

stomach troubles which were treated by operation, on the assumption of organic stenosis, but nothing of the kind was found, and the symptoms persisted and increased, while other signs of tabes appeared as if aroused by the operation. In one case a surgeon was sued for damages for having aggravated the stomach disturbances by a gastroenterostomy for incessant vomiting which had been ascribed to stricture of the pylorus. Other signs of tabes developed afterward, and the gastric crises persisted and increased in intensity. Debove mentions some other cases which show that a gastroenterostomy rapidly unites when there is no obstruction at the pylorus. In another case the unrecognized tabetic gastric crises were ascribed to gallstones, and the gall bladder was resected; then a movable kidney was immobilized, but the gastric crises still persist, being even more intense. Other cases related refer to intensely painful intestinal and bladder disturbances in which operative treatment only whipped up the unsuspected causal tabes. Tabes should, therefore, be a *noli me tangere* for the surgeon, although Debove mentions that Dubar and Leroy reported last year two cases of gastric crises cured by gastroenterostomy.

33. **Hygiene in China.**—Matignon was attached to the French legation at Pekin for years, and he states that although there is absolutely no urban hygiene in China, yet the Chinese personally practice hygiene without knowing it. They are temperate, their food is hygienic, they always boil their drinking water, and the climate in northern China is dry and cold—not a drop of rain falls from September to May—while the sunshine is that of Africa. He noticed that during the winter and spring in the campaign in Manchuria, chestnut hair bleached to blonde and blonde hair became almost white. He adds that when the Chinese once wake to the necessity for urban hygiene they will obtain results more satisfactory than we can show now, and at less expense.

Revue de Médecine, Paris.

July, XXVIII, No. 7, pp. 587-664.

36 Old Doctrines, Useful Errors. (Vieilles doctrines, erreurs utiles.) F. J. Collet.
37 *Radium Treatment of Angioma. L. Wickham and Degrais. Commenced in No. 6.
38 Use of Greek in Medical Language. (Construction des néologismes.) R. Pepin.
39 Experimental Reproduction of Landouzy's Typhobacillosis. H. Gougerot.

Cancer Research Supplement, pp. 1-58.

40 *Etiologic Problem of Cancer. Borrel.
41 *Precancerous Morbid States. (Etats morbides précancereux.) P. Menetrier.

37. **Radium Treatment of Nevus and Angioma.**—Wickham and Degrais give some colored plates showing the complete retrogression of large port-wine vascular nevus on the face in three cases. One patient was a man; after five hours' exposure in the course of nineteen days a large uneven, tuberous nevus on his cheek had vanished, and the skin was normally smooth with the exception of one minute nodule. There was no trace of cicatricial tissue left; the skin was only a little pinker than normal. Another patient was a child with a protruding, pulsating vascular nevus spreading over much of the cheek, ear and neck. Except for a slightly pinker tint, the region is now entirely normal. The radium seems to have an unmistakable action on angioma. The angiomatous tissue is not destroyed by the radium, but it speedily loses its color and retrogresses, seemingly melting away under the influence of the radium rays. The action is pronounced and gratifying on tuberous, erectile, pulsating angioma. Flat or scarcely raised nevi give inconstant results. Sometimes they are all that could be wished, but in other cases unexpected resistance may be encountered and depression and pigmentation may follow the exposures. Nevi on the trunk and limbs have proved less amenable than those on the face. The application of the radium is painless, and no by-effects have been observed. The most convenient form of application is a disc of metal or cloth on which the radium is embedded in varnish. The applications can be made while the patient is sleeping. Six typical cases are related in detail. One week of daily half-hour applications of a 2 cm. disc representing 50,000 units cured a rapidly progressing port-wine pulsating nevus on a baby, with nothing to mark the spot except that the skin is still a little pinker than the rest. Their previous communications on this subject were summarized in THE JOURNAL, March 7 and 28, 1908, pages 806 and 1084.

40. THE JOURNAL, Aug. 8, 1908, page 514.

41. THE JOURNAL, Aug. 8, 1908, page 514.

Semaine Médicale, Paris.

July 29, XXVIII, No. 31, pp. 361-372.

42 *Suburethral Abscess in Women. (Abcès sous-uréthraux chez la femme.) F. Lejars.

42. **Suburethral Abscess.**—Lejars reports a few cases and reviews the literature. He insists on the importance of excising the wall of the abscess; mere evacuation is not enough. He mentions several points that should be borne in mind when excising the wall to prevent injury of the urethra, etc.

Beiträge zur klinischen Chirurgie, Tübingen.

July, LVIII, No. 3, pp. 571-821.

43 Operative Treatment of Irreducible Forward Dislocation of Hip Joint. (Operative Behandlung irreponibler vorderer Hüftluxationen.) E. Streissler.
44 Suture of Arteries. (Arteriennaht.) F. Faykiss.
45 *Spinal Anesthesia and Its By-Effects and After-Effects. (Lumbalanästhesie und ihre Neben- und Nachwirkungen.) K. Borszeky.
46 Indications for and Results of Suture of the Bladder. (Blasennaht.) Renner.
47 Rare Dislocations of Shoulder, Pelvis and Hip. (Zur Kasuistik seltener Luxationen des Schultergelenks, etc.) Lindenstein.
48 Cholesteatoma of Umbilicus. (Cholesteatom des Nabels.) H. Coenen.
49 Primary Carcinoma of Jejunum and Ileum. W. Schlieps.
50 *Frequency of Necrosis of the Limbs After Ligation of Large Trunk Vessels. (Häufigkeit der Extremitätennekrose nach Unterbindung grosser Gefässstämme.) E. Wolff.
51 Chondrectomy for Emphysema from Rigidity of the Thorax. (Chondrektomie bei Emphysem infolge starrer Thoraxdilatation.) H. Seidel.

45. **Spinal Anesthesia.**—Borszeky reports success in 90 per cent. of 300 cases in which operations were done under spinal anesthesia. In 1.3 per cent. of the cases the analgesia was inadequate, and in 8.7 per cent. there was no analgesia. The by-effects and after-effects were at times so serious that he warns that the method should never be applied outside of a clinic or hospital. The main factors for success are the withdrawal of exactly the right amount of fluid, very slow injection of the undiluted solution, keeping the patient still sitting up for two or three minutes after the injection, and then keeping the head high as the patient reclines. Spinal anesthesia, he says, should be restricted exclusively to operations below the umbilicus for which local anesthesia is not adapted.

50. **Frequency of Gangrene After Ligation of Trunk Vessels.**—Wolff's extensive review of this field of surgical intervention tabulates 2,043 cases of ligation of a main artery or vein or both. Necrosis was observed in 233 cases, that is, in 11.4 per cent. The largest proportion of cases occurred in the legs.

Berliner klinische Wochenschrift.

July 27, XLV, No. 30, pp. 1389-1432.

52 *Principles of Treatment of Carcinoma Based on Action of Antiferments. (Grundzüge einer Antifermentbehandlung des Carcinoms.) J. Hofbauer.
53 *Influencing of Malignant Tumors by Atoxyl and Foreign Albumin. (Beeinflussung bösartiger Geschwülste durch Atoxyl und fremdartiges Eiweiss.) A. Sticker.
54 Negative Results of Injections of Placenta Blood in Carcinoma. (Injektionen von Placentarblut bei Carcinom.) E. Falk.
55 Importance of Antitrypsin in Blood. (Bedeutung des Antitrypsins im Blute.) v. Bergmann and Bamberg.
56 Treatment of Extreme Obesity. (Entfettung und Entwässerung bei hochgradiger Fettsucht.) L. Brieger.
57 Fat-Splitting Properties of Syphilitic Sera and Importance of Lipolysis for Serodiagnosis of Syphilis. (Fettspaltungsvermögen syphilitischer Sera.) J. Citron and K. Reicher.
58 Treatment of Enlargement of Prostate. (Therapie der Prostatahypertrophie.) Casper.
59 Importance of Urea-Carbonic Acid for Chemistry of Drugs. (Allophansäure und ihre Bedeutung für die Chemie der Heilmittel.) M. Overlach.
60 Dehiscence of Maxillary Sinus. (Dehiscenzen der Kieferhöhle.) H. E. Kanasugi.

52. **Principles of Antiferment Treatment of Cancer.**—Hofbauer comments on the constant presence of lecithin in malignant tumors, and reviews the literature on lecithin, showing its power to activate previously inert toxins and ferments. He compares this activating property to that of the spermatozoon on the ovum, and discusses the importance of counter-

acting this activating property displayed by lecithin or abnormal ferments in cancer. He has been experimenting with various ferment-inhibiting means, such as quinin, arsenic, cholesterin and foreign serum. In 20 cases of inoperable cancer the tumors decreased in size in every case under the influence of subcutaneous injection of the antiferment around the tumor or into its depths. In some cases the retrogression was so pronounced that only slight traces of the cancer still remain. The glands in the vicinity also retrogressed with the tumors. He injected twice a week about 25 c.c. of beef serum or about 0.4 c.c. cholesterin (dissolved in alcohol and precipitated with physiologic salt solution); or 0.5 or 0.1 gm. of quinin or 0.3 gm. atoxyl. The beef serum caused a little general reaction.

53. **Influencing Cancer by Foreign Albumin.**—Stieker relates extensive research along the same lines as reported in the preceding article—both of which issue from Bier's clinic at Berlin. He found that excellent results were obtained in malignant tumors by injection into the periphery of 10 or 15 c.c. of sheep blood (the foreign albumin) followed the next day by an injection of not more than 0.01 gm. of atoxyl, repeated the fourth and sixth day, recommencing the series anew the eighth day with another 10 or 15 c.c. of sheep blood. This simple combination treatment had a favorable effect not only on malignant tumors, but also in cases of enlarged prostate. The beneficial influence was prompt and decided, but it did not prove permanent in any instance.

Deutsche medizinische Wochenschrift, Berlin.

July 23, XXXIV, No. 30, pp. 1297-1336.

61 *Behavior of Cutaneous Tuberculin Reaction During Measles. (Verhalten der kutanen Tuberkulinreaktion während der Masern.) C. v. Pirquet.
62 Mitral Stenosis. P. Hampeln.
63 Severe Diabetes Due to Syphilitic Infection. R. Ehrmann.
64 *Operative Treatment of Acute Pancreatitis. L. Bornhaupt.
65 *Rachitis and Scoliosis. E. Kirsch.
66 Universal Favus. Talat.

61. **Suspension of Tuberculin Reaction During Measles.**—Pirquet has found that tuberculous children suffering from measles lose their capacity to react to the cutaneous tuberculin test. He tabulates the findings in 159 cases of measles, 24 in tuberculous children. The reaction became negative after the eruption appeared and then gave positive findings again, commencing the fifth day. He suggests that a positive cutaneous tuberculin reaction can be utilized as testimony against the measles.

64. **Operative Treatment of Acute Pancreatitis.**—Bornhaupt reports the third case of acute pancreatitis in which he operated. The patient was a woman of 42 who has been in the best of health since then. He shows that an early diagnosis of acute pancreatitis is possible by exclusion. In the early stages and in merely partial disease of the gland, the sugar in the urine is an important aid for the diagnosis. Intervention should be as prompt as possible, not only to divert the course of the pancreatic secretion out of the abdominal cavity, but to relieve the congested gland and infiltrated retroperitoneal tissue, and to restore conditions for normal circulation in the pancreas.

65. **School Scoliosis.**—Kirsch has been examining 1,015 school children with reference to scoliosis, distinguishing between the form that can be corrected and "fixed" curvature of the spine. The latter is either congenital or of rachitic origin in nearly every instance. Bachmann found scoliosis in less than 1 per cent. of 8,959 cadavers examined at Breslau, but the German school physicians have found that one in every three children has more or less scoliosis. Evidently the "non-fixed" curvature corrects itself later, while the "fixed" grows worse. Kirsch thinks that the best way to differentiate these forms is to have the child bend the trunk forward with the arms hanging. "Non-fixed" curvature corrects itself in this posture, while the "fixed" becomes more apparent, and torsion is plainly revealed. The important lesson taught by his research is the necessity for detection of rachitic scoliosis in its incipiency, and its appropriate treatment before the child is old enough to enter school. Physicians are too much inclined to postpone proper treatment with the indispensable plaster bed until the child is older, believing that it will outgrow the tendency to curvature. But this is extremely doubtful with rachitic curvature, while the finest results can be counted on if the tendency is corrected in time. The soft torsion-hump of young rachitic children yields readily to appropriate measures applied in time.

Deutsche Zeitschrift für Chirurgie, Leipsic.

July, XCIII, No. 6, pp. 505-587.

67 Pseudofractures of Sesamoid Bones of First Metatarsophalangeal Joint. L. Igelstein.
68 Mechanism of Bursting of Intestine from Abdominal Straining. (Mechanismus der Darmberstung unter der Wirkung der Bauchpresse.) F. Kempf.
69 *Origin of Primary Carcinoma. (Entstehung primärer Carcinome.) O. Wyss.

69. **Origin of Cancer.**—Wyss accepts Ribbert's theory that carcinoma originates in epithelial cells over which the body has lost control and which then proliferate on their own hook at the expense of the body. In this long article he presents an array of evidence to sustain this assumption. In particular, he shows that changes in the subcutaneous tissue or vessels from local arteriosclerosis, interfering with the blood supply, finally shut off the epithelium above from the direct control of the rest of the body. This is shown instructively in Roentgen cancers, the infiltration of the subcutaneous tissue and papillary layer of the corium occluding the capillaries and gradually shutting off the epithelium from the blood supply. As long as the body is capable of responding with lively new formation of vessels, growth of capillaries, the epithelium does not suffer, but with advancing years this property is lost, and the epithelial cells gradually become excluded from the rest of the organism. The epithelial cells always display a peculiar faculty for independent existence, more than any other cells in the body, as in transplanted detached grafts. The details of 36 cancers are tabulated, all showing the infiltration below and the exclusion of the growth from the blood supply.

Medizinische Klinik, Berlin.

July 26, IV, No. 30, pp. 1137-1178.

70 *Importance of Serum Diagnosis of Syphilis in Obstetrics. (Bedeutung der Wassermannschen Luesreaktion für die Geburtshilfe.) E. Opitz.
71 Nervous Disturbances in Heart Action. (Nervöse Störungen der Herztätigkeit.) Winckelmann.
72 *Incandescent Light Baths in Chronic Bronchial Affections. (Anwendung von elektrischen Glühlichtbädern bei chronischen Bronchialerkrankungen.) A. v. Strümpell.
73 Perverted Sense of Smell. (Subjektive Kakosmie.) G. Lennhoff.
74 Treatment of Inoperable Tumors with Radium. (Behandlung inoperabler Geschwülste mit Radium.) A. Selig.
75 *General Pathogeny and Symptomatology of Disturbances in Speech in Children. (Kindliche Sprachstörungen.) F. Kobrak.
76 Tests for Antimeningitis Serum. (Genickstarreserum.) F. Neufeld.

70. **Importance of Serum Diagnosis of Syphilis in Obstetrical Practice.**—Opitz hails the serum diagnosis of syphilis as of the greatest importance in maternities. A negative result proves nothing, but positive findings confirm the assumption of syphilitic infection with almost complete certainty. He has applied the test in 104 cases in the lying-in ward since last March, and obtained a positive response in 10 cases. The course of the cases later confirmed the findings in all but 2, but only 2 of the new-born children of the 10 mothers gave a positive response. The presence of the spirochetes alone is not enough to induce the reaction; other processes are evidently at work which occur less readily in the fetus than in the mother. The advantages of thus being able to differentiate the syphilitic patients and their offspring are obvious. He thinks that no woman should be recommended as a wet-nurse until the serum test has been applied. Negative findings are not absolutely decisive, but give comparative confidence. In the few cases in which the women gave a positive reaction, although apparently free from syphilis, it may be possible that the spirochetes in the fetus elaborated substances which passed into the maternal blood and induced changes such as the spirochetes themselves would have induced. He advised such women of their condition and impressed on them the necessity for prompt treatment at the first indication of symptoms, but he did not institute treatment on the basis of the positive reaction to the serum test

alone. He suggests, in conclusion, that possibly the mere fact of pregnancy may cause changes in the blood similar to those induced by the spirochetes and entail a positive reaction exceptionally in the non-syphilitic.

72. **Electric Light Baths in Chronic Bronchial Affections.**—Strümpell says that Kellogg's incandescent light baths have first made it possible to induce energetic diaphoresis without the slightest inconvenience or annoyance to the patient. He has found this technic of the greatest benefit in chronic bronchitis, especially the dry form, without secretion. He warns expressly that it is suited only for the primary cases, and that they must be carefully differentiated for the purpose. He knows of no other treatment for bronchial asthma which gives such good results as a few weeks of this technic, as his experience has demonstrated in fifteen cases with no recurrences to date. In two other cases only transient benefit was obtained. Any sweating procedures may prove beneficial, but the incandescent bath evidently acts not only on the sweat glands, but on others and on the epithelium of the bronchial mucosa. This action may be supplemented by the increased elimination in the sweat and secretions and by the hyperemia induced in the skin and by the influence on the general circulation—all of which help to explain the permanently favorable influence. In conclusion he warns against Roentgen treatment for the present, as it is not yet fully under control, and he advises institutional treatment for the incandescent course. Much the best results were obtained in his experience when the patients were under continuous medical oversight and influence.

75. **Defects in Speech.**—Kobrak distinguishes between the two factors in stuttering: the spastic paresis and the ataxia. The primary spastic paresis seems to be more the expression of certain organic focal defects, while the primary ataxia seems to develop more on a purely psychogenic basis. The latter is amenable to psychic and pedagogic measures. The defect in the speech center may be corrected by exercises. Much can be done in prophylaxis. This does not mean that every child with a tendency to stutter should be sent to a special sanatorium—although far the best results are obtained by institutional treatment. The stutterer should be patiently shown again and again how he can control his affection by physiologic exercises of the speech and avoidance of charlatans' methods.

Münchener medizinische Wochenschrift.

July 21, LV, No. 29, pp. 1521-1568.

77 Improved Polyvalent Antiserum. (Eine wesentliche Verbesserung meines Serums.) R. Deutschmann.
78 *Detection of Scanty Typhoid Bacilli. (Verfahren zum Nachweis spärlicher Typhusbazillen.) H. Conradi.
79 Ultrafiltration of Chicken Cholera Virus. (Ultramikroskopische Infektionserreger.) G. Giemsa and S. Prowazek.
80 Hermaphroditism. A. Hegar.
81 Treatment of Acute Coryza. (Behandlung des akuten Schnupfens.) H. Löwy.
82 Suicide During Childbirth. (Zur Kasuistik des Selbstmordes während der Geburt.) K. v. Sury.
83 Measurement and Dosage of Roentgen Rays by Absolute Units. (Röntgenolyse.) F. Klingelfuss.
84 Acute Dilatation of Heart. (Zur Frage der akuten Herzüberanstrengung.) Schott.

78. **Technic for Cultivating Scanty Typhoid Bacilli.**—Conradi has studied 300 different dyes in the last three years, seeking to improve the technic for detection of typhoid bacilli. A combination of 1/15,000 picric acid and 1/150,000 brilliant green and peptonized agar with a little meat extract has proved the best technic for cultivating scanty typhoid bacilli, while inhibiting the growth of other germs, thus simplifying agglutination. He describes his experience with this "green plate" technic, which allows differentiation in twenty hours.

Wiener klinische Wochenschrift.

July 23, XXI, No. 30, pp. 1079-1108.

85 Relations Between Chemical Constitution, Physico-Chemical Properties and Pharmacodynamic Action. E. Pribram.
86 Anaphylaxis Produced by Organ Extracts. R. Kraus, R. Doerr and Sohma.
87 Laws of Peptic Digestion. (Gesetze der peptischen Verdauung.) H. Reichel.
88 *Conservative Treatment of Chronic Suppuration Above the Tympanum. (Konservative Behandlung chronischer Eiterungen des Epitympanum.) L. Mekler.
89 Streptococcus Aggressins in Blood in Puerperal Sepsis. E. Hoke.
90 Adrenalin-Saline Injections as Adjuvant in Treatment of Exceptionally Severe Diphtheria. (Diphtherietherapie.) D. Pospischill. Commenced in No. 29.

88. **Conservative Treatment of Chronic Suppuration Above the Tympanum.**—Mekler reports two cases of obstinate suppuration in which he finally obtained a cure by blowing boric acid into the ear, the patient meanwhile reclining with his head hanging over the edge of a sofa, with the affected side down, the mastoid antrum therefore being at the lowest point. This brought the powder exactly where needed. The patient lay in this position for ten minutes, and the procedure was repeated every day, the result being that the suppuration gradually dried up.

Zentralblatt für Chirurgie, Leipsic.

July 25, XXXV, No. 30, pp. 905-936.

91 Antiferment Treatment of Suppurative Processes without Incision. (Antifermentbehandlung eitriger Prozesse.) H. Kolaczek.
92 *Treatment of Burns. (Behandlung von Verbrennungen.) L. Renner.

August 1, No. 31, pp. 937-960.

93 Treatment of General Sepsis and Pyemia. (Behandlung septischer und pyämischer Allgemeininfektion.) P. Sick.
94 Reversed Form of "Madelung's Deformity." De Witt Stetten.

92. **Treatment of Burns.**—Renner reports excellent results in treatment of burns from application of a powder of one part bismuth to two parts kaolin. He has applied it in hundreds of cases during the last few years, and says that it effectually keeps the surface dry, while it prevents infection and allows the dressings to be easily renewed.

Zentralblatt für Gynäkologie, Leipsic.

July 25, No. 30, pp. 969-1000.

95 *"Nerve Nucleus Icterus" of the Newly Born. (Kernikterus der Neugeborenen.) P. Esch.
96 *The "Convoluted" Uterus. (Der "schneckenförmige" Uterus.) E. M. Simons.

August 1, No. 31, pp. 1001-1032.

97 Case of Sclerema in New-born Infant. (Sklerema neonatorum.) P. Esch.
98 Antiprolapse Pessary. (Ein neues Pessar gegen Uterus- und Scheidenvorfall.) L. Friedmann.

95. **Nerve Jaundice of the Newly Born.**—The infant in the case reported by Esch presented general jaundice a few days after birth, early accompanied by tonic convulsions and bulbar symptoms. Several other members of the family had been affected with jaundice, as was noted also in Beneke's two cases. The nuclei of the nerves in certain regions showed intense yellow discoloration. The termination of this "nucleus icterus" has been invariably fatal in the few cases known to date.

96. **"Convoluted" Uterus.**—Simons treats this defective development of the cervix by tents, with or without an incision. He has previously described it as "posthorn kinking" of the cervix, but thinks that Bossi's comparison of it to the convolutions of a seashell is more appropriate. An intrauterine tent usually proves effectual in restoring conditions to normal. Bossi's indications were summarized in these columns July 4, page 88.

Gazzetta degli Ospedali e delle Cliniche, Milan.

July 19, XXIX, No. 86, pp. 905-920.

99 Two Cases of Rupture of Aorta. (Rottura dell'aorta.) V. Maragliano.
100 Influence of Morphin on Resistance of Red Corpuscles. (Influenza della morfina sulle resistenze dei globuli rossi.) G. Bonanno.
101 *Experimental Ligation of Abdominal Aorta. (Legatura dell'aorta addominale.) U. Fiore.
102 Leucocyte Formula in Primary Anemia. (Valore semejologico della formola leucocitaria nelle anemie primitive.) M. Giacomo.
103 Instrument for Intubation. (Nuovo intubatore del laringe.) G. Belloni.

101. **Ligation of Abdominal Aorta.**—Fiore concludes from his experimental research on dogs that ligation of the abdominal aorta is feasible. The animals all tolerated it without much disturbance when it was done about 4 cm. above the bifurcation. He found the transperitoneal route the most convenient. None of the patients recovered in the fourteen cases he reviews from the literature, but he does not think

that the ligation was responsible for the fatal outcome in any instance, and is confident that it has every prospect of success on a young and healthy patient.

Policlinico, Rome.

July, XV, Medical Section, No. 7, pp. 289-336.

104 Agglutination of Red Corpuscles by Various Bacteria. (Sulla emoagglutinazione batterica.) G. Guyot.
105 The Blood in Typhoid, with Special Regard to Behavior of Polymorphous Neutrophile Leucocytes. (Il sangue nell' infezione tifosa.) A. Bucalossi. Commenced in No. 6.

July, Surgical Section, No. 7, pp. 289-328.

106 Case of Muscular Angiomata. V. Porcile.
107 *Primary Sarcoma of Liver. (Sarcoma primitivi del fegato.) G. Bertelli. Commenced in No. 6.
108 Paragastric Appendicitis. (Contributo anatomo-patologico, patogenetico e clinico alle dislocazioni appendicolari.) P. Frascella.

July 26, Practical Section, No. 30, pp. 933-964.

109 *Löwy's Sign of Insufficiency of the Pancreas. (Nuovo segno dell'insufficienza pancreatica.) R. G. Quadrio.

107. **Primary Sarcoma of the Liver.**—Bertelli has been studying two cases of primary sarcoma of the liver, but was unable to discover any special syndrome for this affection. The liver soon attains a large size, while as a rule there is no ascites or jaundice.

109. **Löwy's Sign of Insufficiency of the Pancreas.**—Löwy found that adrenalin instilled into the conjunctival sac had no appreciable effect on normal animals, but induced pronounced dilatation of the pupil in animals whose pancreas had been removed. The same effect was obtained in diabetics, while other patients showed no response to the instillation. Quadrio reports similar findings in 25 patients: 20 free from any tendency to a pancreatic affection presented no reaction, but pronounced mydriasis was observed in the 5 others, and 4 of these had a tumor in the pancreas or were in advanced diabetes, while the fifth was an epileptic. The technic is simple—merely instillation of 3 or 4 drops of the suprarenal preparation in the conjunctival sac. When the reaction is positive, pronounced mydriasis occurs in a few minutes.

Hospitalstidende, Copenhagen.

June 3, LI, No. 23, pp. 641-688.

110 *Operative Treatment of Sciatica. (Ischias.) A. Pers. Commenced in No. 22.

June 10, No. 24, pp. 689-712.

111 Copper-Hydroxylamin Test for Grape Sugar. (Bangs Metode til Bestemmelse af Druesukker.) H. Jessen-Hansen.
112 *Recurring Tuberculous Polyarthritis. (Tuberkulös Ledreumatisme.) K. Schäffer. Commenced in No. 23.

June 17, No. 25, pp. 713-744.

113 Apparatus for Abdominal Massage. (Bugmassageapparat.) J. C. Johansen.

June 24, No. 26, pp. 745-784.

114 Sterilization of Metal Instruments. M. Claudius.
115 Iodized and Chromicized Catgut. (Jodkromkatgut.) Id.
116 Improved Technic for Microtomy. (Paraffinoid.) Id.

July 8, No. 28, pp. 817-848.

117 Operations on Kidneys when Catheterization of Ureters is Impossible. Six Cases. (Nyreoperationer efter svigtende Forsøg med Uretercystoskopet.) H. Kaarsberg. Commenced in No. 27.

110. **Simple Operative Treatment of Sciatica.**—THE JOURNAL summarized, June 16, 1906, page 1894, Pers' earliest communication on the immediate and permanent cure of unusually severe and prolonged sciatica by exposing the nerve and releasing it from a network of adhesions which was binding it down. Since then he has applied this simple treatment in 47 cases with good results, as reported in THE JOURNAL, August 22, page 715. In his last 18 cases he has followed Baracz's technic for access to the nerve. In 6 cases there was a hip-joint affection besides, but the patients were relieved of their sciatica. He reviews the history of operative treatment of sciatica, adding that he intentionally refrains from stretching the nerve, as releasing it from adhesions has proved all that is necessary.

112. **Recurring Tuberculous Polyarthritis.**—Schäffer reports the details of thirteen cases which confirm Poncet's assertions in regard to the existence of tuberculous rheumatism, the patients presenting arthralgia, acute and subacute arthritis simulating acute rheumatic fever, or a chronic arthritis similar to various forms of chronic articular rheumatism. These affections are probably of toxic nature, but the importance of differentiating their tuberculous origin early is evident, so that no time need be wasted on the salicylates or mercury or antigonorrheal treatment. None of the thirteen patients has developed endocarditis since, and in none of the cases had there been a primary angina, so often noticed with true rheumatic fever, and there have been no evidences of gonorrhea or syphilis since in any case. One patient was a girl of thirteen, being treated for tuberculous glands in the neck. Pains developed in different joints with slight fever, but nothing pathologic could be discovered in the joints, although the pains persisted for a month with remissions at times. The child has been entirely free since from all tuberculous manifestations and is in good health to date thirteen years later. In another group of cases the clinical picture was that of acute rheumatic fever, except that the temperature was never very high and the joints not so sensitive, while the general health did not suffer as with rheumatic fever. In some other cases the tuberculous arthritis finally localized in one joint and persisted for a long time. In one case coxitis had long been preceded by pain in this and other joints. One patient had first the arthralgia, then scrofulous conjunctivitis, and later tuberculous nephritis. This is a striking example of acute polyarthritis as the first manifestation of tuberculosis. Schäffer reviews the entire literature on the subject, reiterating that an acute polyarthritis which does not respond to the salicylates is strongly suspicious of tuberculosis. A total of 28 cases of joint affections are recorded among the 3,335 tuberculous children admitted during the last 32 years to the Refsnæs Hospital in his charge.

Upsala Läkareförenings Förhandlingar.

June 20, XIII, No. 5, pp. 307-393.

118 Infectiousness of Clothes Worn by Consumptives. (Infektiositeten hos lungsiktigas kläder.) R. Friberger.
119 Involution of the Thymus in Rabbits. (Thymuskörtelns åldersförändringar hos kaninen.) G. Söderlund and A. Backman.
120 Enlarged Wandering Spleen with Torsion of the Pedicle. Splenectomy. (Hypertrofisk vandermjälte med stjälkvridning.) A. Reuterskiöld and A. Vestberg.
121 Cholesterin Crystals in Pleural Effusion. (Cholesterinkristaller i pleuraexsudat.) V. Hedesström.

Supplement, pp. 1-504.

122 History of Operations for Hernia. Remote Results of 655 Herniotomies at Upsala. (Radikaloperationer för brack.) S. Lindqvist.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

SCIENTIFIC MEMOIRS. By Officers of the Medical and Sanitary Departments of the Government of India. No. 32. An Inquiry on Enteric Fever in India, Carried Out at the Central Research Institute, Kasauli, Under the Direction of Lieutenant-Colonel D. Semple, M.D., Director of the Institute, and Captain E. D. W. Greig, M.D. Cardboard. Pp. 108. Price, 30c. Calcutta: Superintendent Government Printing, 1908. No. 33. The Production of Alkali in Liquid Media by the Bacillus Pestis. By Lieut.-Colonel W. B. Bannerman, M.D., B.Sc., I.M.S. Cardboard. Pp. 12. Price, 12c. Calcutta: Superintendent Government Printing. No. 34. Standards of the Constituents of the Urine and Blood and the Bearing of the Metabolism of Bengalis on the Problems of Nutrition. By Captain D. McCay, M.B., B.Ch., B.A.O., I.M.S., Professor of Physiology, Medical College, Calcutta. Cardboard. Pp. 67. Price, 30c. Calcutta: Superintendent Government Printing, 1908.

CATARACT EXTRACTION. A Series of Papers with Discussion and Comments Read Before the Ophthalmological Section of the New York Academy of Medicine, 1907-1908. Edited by J. Herbert Claiborne, M.D., Instructor in Ophthalmology Cornell University Medical College. Cloth. Pp. 169. Price, $2.00. New York: William Wood & Co., 1908.

DISEASES OF THE RECTUM, ANUS AND SIGMOID COLON. By F. Swinford Edwards, F.R.C.S., Surgeon to the West London Hospital. Third Edition of Cooper and Edward's Diseases of the Rectum and Anus. Cloth. Pp. 442, with illustrations. Price, $4.20. Philadelphia: P. Blakiston's Son & Co.

THE EXTRA PHARMACOPEIA. Revised by W. Harrison Martindale, Ph.D., F.C.S., and W. Wynn Westcott, M.B. Lond., D.P.H., H.M.'s Coroner for North-East London. Thirteenth Edition. Flexible Leather. Pp. 1,164. Price, $2.75. London: H. K. Lewis, 1908.

INDUSTRIAL AND PERSONAL HYGIENE. By George M. Kober, M.D., LL.D., Professor of Hygiene, School of Medicine, Georgetown University. A Report of the Committee on Social Betterment. Paper. Pp. 175. Washington: President's Homes Commission, 1908.

MEDICAL GREEK. By Achilles Rose. Cloth. Pp. 262. Price, $1.00. New York: Peri Hellados Publication Office.